



PUBLISHED EVERY FRIDAY

AT

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"

Telephone No.: WHITEHALL 9233 (6 lines)

Annual subscription payable in advance and postage free:
 British Isles and Abroad £2 5s. 9d.
 Single Copies One Shilling
 Registered at the General Post Office, London, as a Newspaper

VOL. 65. No. 1

FRIDAY, JULY 3, 1936

CONTENTS

	PAGE
Editorials	1
Letters to the Editor	6
Publications Received	7
The Scrap Heap	8
Overseas Railway Affairs	9
2-8-2 Type Three-Cylinder Engines, L.N.E.R.	12
Colour-Light Signalling at Leeds New Station, L.N.E.R.	14
Railways and Road Transport Section	15
Railway News Section	23
Personal	23
Railway News Articles	27
Notes and News	32
Contracts and Tenders	34
Official Notices	35
Railway Share Market	36

An Index to the Sixty-fourth Volume of THE RAILWAY GAZETTE covering the issues from January 3, to June 26, 1936, is presented as a Supplement to each copy of this week's issue.

An Imperial Railway Jubilee

THE Canadian Pacific Railway occupies an outstanding place in the story of transport development as having been considered from its inception as a link in a chain of Empire communication. It is well known, even in non-railway circles, that the construction of this great transcontinental railway was an essential feature of the inclusion of British Columbia in the Dominion of Canada in 1871, but even then a far wider sphere of utility was envisaged. Although such views were considered by many to be but distant visions, pioneers of the ocean-to-ocean railway saw it from the first as a link in a world chain of British ships and railways. This aspect of the C.P.R. was reflected in Sir John Tenniel's cartoon "The New North-West Passage" in *Punch* of October 15, 1887, when the granting of the Pacific mail subsidy marked official recognition of this route to the Orient. It is therefore natural that the fiftieth anniversary this week of the first through train to the Pacific should be attracting worldwide attention. As we record on page 35, the train which left Windsor station, Montreal, on Sunday last is being feted across the continent, and, led by the King, all parts of the world have sent congratulations to the present owners of the C.P.R. on the possession of a great heritage.

Professor Dalby

The death, at the age of 72, of William Ernest Dalby, recorded in our personal columns this week, deprives railways of an authority whom they have often had occasion to consult on matters of locomotive design and other important subjects. With a thorough grounding in locomotive shopwork, first at Stratford and then at Crewe, followed by an engineering course at Cambridge, Professor Dalby specialised in the balancing of engines, valve gears, general locomotive design, and strength of materials. The many hundreds of students who have taken civil and mechanical engineering degrees or diplomas at the City and Guilds of London Central Technical College, South Kensington, now the engineering section of the Royal College of Science and Technology, will long remember the training they received at his hands. Others, too, must have derived valuable knowledge from his works "Steam Power," "Power and the Internal-Combustion Engine," and from those dealing with engine balancing, valve gears and steelwork. Professor Dalby was President of a section of the British Association in 1910, and was elected an F.R.S. three years later. During the war he did important confidential work for the various services. More recently he had been closely associated with locomotive experimental and testing work and with streamlining, in collaboration with locomotive engineers.

* * * *

The Week's Traffics

Falls of some magnitude are shown in the passenger train traffics of the four group companies for the past week, that of the L.M.S.R. being the most striking. In the week of 1935, however, with which comparison is made the L.M.S.R. had a passenger train increase of £34,000, the Great Western one of £25,000, and the Southern one of £12,000. The aggregate receipts of the four companies together for the first half of 1936 amount to £73,719,000, an increase of £1,819,000, or 2.53 per cent. The increase is made up of £72,000 from passenger train receipts, of £1,152,000 from merchandise, and of £595,000 from coal class traffics.

	26th Week				Year to date	
	Pass., &c.	Goods, &c.	Coal, &c.	Total	Inc. or Dec.	%
L.M.S.R.	— 45,000 + 22,000 + 9,000 — 14,000 + 937,000 + 3.22					
L.N.E.R.	— 8,000 + 11,000 — 4,000 — 23,000 + 534,000 + 2.50					
G.W.R.	— 16,000 + 8,000 — 1,000 — 9,000 + 263,000 + 2.20					
S.R.	— 4,000 — 6,500 — 5,500 — 16,000 + 85,000 + 0.90					

London Transport aggregate receipts for its third year which ended last Saturday amounted to £28,477,300, an increase of £380,400.

* * * *

Unification of Railways and Transport

Mr. F. H. Willis, who has just retired from the Secretaryship of the Southern Railway, made some interesting observations to an *Evening News* reporter the other day on the future of the British railways and inland transport generally. He visualised an amalgamation of the four main line companies, control by the railways of all the transport of the country outside the London Passenger Transport Board area, and electrification of all lines within a hundred miles of London. With regard to the last he had in mind the success of the Southern electrification, and there is every reason to suppose that electrification of most, if not all, the other suburban systems would also be successful. As to the monopoly of transport prophesied by Mr. Willis, he expressed the belief that the unification of the railways would lead to even greater efficiency than there is today. That would depend on the method of administration. The German State Railway

Company is an example of an efficiently administered but centrally controlled concern, and it is probable that the high degree of decentralisation in its administration, whereby local initiative and responsibility are encouraged, together with the scientifically organised control and advisory headquarters, are mainly responsible for this outcome. If we are to have a transport monopoly in this country we could do worse than study the German State Railway model. While the possibilities of a unified service are great, the risks of mismanagement and abuse of power are not to be lightly disregarded.

* * * *

Overseas Railway Traffics

The latest traffics of Argentine railways are for the week ended June 27 and so bring the returns to within four days of the complete financial year. One of the noticeable features of the receipts for the past fortnight has been the fall of £59,563 shown by the Buenos Ayres & Pacific. On the other hand the decreases shown during the same period have been only £8,720 on the Central Argentine, £3,344 on the Buenos Ayres Great Southern, and £2,741 on the Buenos Ayres Western. For the 52 weeks the Argentine North Eastern has an increase of £21,809, but Entre Rios traffics for the year are down £68,003, and those of the Cordoba Central are down £6,290.

	No. of Weeks	Weekly Traffics	Inc. or Decrease		Aggregate Inc. or Decrease	
			Week	Decrease	Traffic	Decrease
Buenos Ayres & Pacific	52nd	59,027	—	38,620	4,372,423	+ 189,871
Buenos Ayres Great Southern	52nd	110,141	—	1,800	6,671,573	- 682,155
Buenos Ayres Western	52nd	41,876	+	4,382	2,344,148	- 20,239
Central Argentine	52nd	12,480	—	4,474	6,098,642	- 249,635
Canadian Pacific	25th	498,600	+	24,000	11,688,600	+ 1,020,600
Bombay, Baroda & Central India	12th	241,125	+	9,600	2,129,400	+ 161,100

The Canadian Pacific increase in net receipts to the end of May is £191,400, against an increase of £949,600 in gross earnings.

* * * *

Rhodesia Railway Commission

The impending retirement of Sir Richard Goode, C.M.G., C.B.E., from the Rhodesia Railway Commission, which we recorded in our June 19 issue, leaves only the Chairman, Mr. Roger Gibb, remaining of those who constituted the commission when it was set up in 1927. The commission, which began its work with the railway financial year beginning October 1, 1927, is composed of three members, appointed respectively by the Governments of Northern Rhodesia, Southern Rhodesia, and the Bechuanaland Protectorate, with a Chairman, of practical experience in railway working, appointed (with the approval of the Secretary of State) by the three Governments jointly and after consultation with the railway companies. The railways serving Northern Rhodesia, Southern Rhodesia, the Bechuanaland Protectorate, the Mozambique Territory, and 112 miles of railway in the Union of South Africa are worked as one system under private management. The control exercised by the commission is similar to that of the Railway Rates Tribunal in England. It is required to fix such rates and allowance as will be likely to cover fixed charges, a dividend provision, and certain sums to be placed to reserve until a given total is reached.

* * * *

The Ken Viaduct Derailment

Notwithstanding lengthy investigation and a number of experiments made at his request, Colonel Trench, whose report we summarise on page 28 has been unable to ascribe to one definite cause the derailment on December 31 of the down Stranraer express at the Ken Viaduct, L.M.S.R., but concludes that it arose from an unlucky

combination of circumstances occurring at a moment which favoured some relatively ineffective tendency to derailment and made it operative. The diagram, taken from the report shows how serious the effects might easily have been, and, as Colonel Trench remarks, the escape of the postal sorters was all but miraculous. We always feel that the suddenness and alarming effect of a derailment must make it very difficult for witnesses to be sure afterwards of the impressions of the moment; it is unfortunate when so much investigation leaves uncertainties, but there is the consolation that an accident produced as this one most probably was is unlikely to recur.

* * * *

L.N.E.R. Waiting Rooms Redecorated

Following expressions of approval by the public of the redecorated waiting room on platforms 3 and 4 at Shenfield station, L.N.E.R., the company has placed in hand a similar scheme for the waiting accommodation on platforms 1 and 2. The predominating colour is blue, and the walls are covered with Rexine in two shades, dark blue for the lower part and light blue mottled above. The consistency and colour of this material, no doubt, will act as a deterrent to the jovial artists with pencil and chalk who, when the rest of the world is asleep, find in an ordinary white-distempered wall an inducement to indulge in the literary or graphic arts. The city workers of Shenfield will not arise one morning to find that an unknown hand has blazoned upon their walls the statement that "the seats on this line are too — hard," an accusation as palpably false as it is unseemly. A blue lino floor covering, and blue upholstery for the seats tone with the walls. The woodwork of the seating and table is grained in a natural oak colour. Chromium handles for doors and windows are important contributory details to the pleasant atmosphere of the room as a whole.

* * * *

The Transformed Indicateur Chaix

On page 7 of this issue a detailed description is given, in the form of a book review, of the completion of the task of transforming the French "Indicateur Chaix," on which no less than a million francs has been spent. But this has been an effort well worth while, for not only has it improved, in arrangement and clarity, the book itself, with its 850 pages, but the five sections of it, each of which folds into a convenient form for the pocket, form the official timetables of the individual railways, while enlargements of the pages, by a special photographic process, furnish the sheets posted at the stations. That is to say, the passenger, whether using the complete "Indicateur," or the railway company's own timetable, or consulting a station sheet, is confronted in each case with precisely the same *format*, whereby timetable searching must become a greatly simplified business. And the more so in this case, because of the use of uniform conventional signs to save overloading the train columns with notes, and other devices to facilitate reference. The only company in Great Britain to adopt some of these ideas in its timetables, which, with their Gill Sans type, are a model of clear printing, is the London & North Eastern, but separate setting up of timebooks and trainsheets (in larger type) is still required, and notes in the train columns still remain very profuse. The L.M.S.R., on the other hand, is now printing its station sheets off the same plates as the timetables, but this has the disadvantage that the location of station timetable boards is often such that these sheets, with their microscopic type, are illegible to any normal pair of eyes.

"P" Signs on the Southern

In our editorial article on the new Southern Railway colour-light signalling between Waterloo and Hampton Court Junction, on page 1026 of our issue for May 29, we mentioned the new "Proceed," or "P," signs which have been adopted in this installation for the first time. We referred to the effect of the new signs, namely, that of making automatic signals normally into "stop-and-stay" signals, but made no attempt to deal with the general question of passing such signals at danger, a question much discussed in this country of recent years, but one upon which comparatively little information has been made public. We are now able to amplify our article referred to above by recording the fact that the "P" signs on the Southern are for use only in certain defined emergencies, to cover actual failures in the signals or circuits, and no longer for traffic purposes. The signalman is required to take definite action to determine as far as is practicable if the section of line concerned is really clear before allowing a "P" sign to be exhibited.

* * * *

Alfred de Glehn

Few locomotive engineers have been better known during the past 40 years, than the late Alfred de Glehn, whose recent death, at the age of 88, we recorded in our issue of June 12. His name has been associated with a system of compounding which during this period has constantly proved its success, and has earned for locomotives incorporating it a reputation second to none for economy and ability to haul heavy loads at uniformly fast speeds even on severely adverse gradients. Though in his earliest designs there were more than traces of Webb's influence in de Glehn's engines—notably the relative positions of the high and low pressure cylinders, each pair of which drove an independent pair of wheels without coupling rods—he believed in four cylinders from the first, and adhered to the principle of providing separate sets of valve gear for high and low pressure cylinders. The perfection of the system may be said to have first been approached when in 1891 M. de Glehn, in collaboration with M. du Bousquet, the Locomotive Superintendent of the Northern Railway of France, produced for that railway the type of locomotive which in general principle has been developed and standardised on most other French systems until the present day, as well as proving its success on railways in other parts of the world. In this country the three Great Western de Glehn Atlantics are well remembered and were used for express working for over 20 years. On the Bengal-Nagpur Railway increasingly powerful de Glehn compounds have been ordered from time to time, and the Indian State, American and Continental railways have also tried the type.

* * * *

Medium Manganese Rails

It was obvious, when the British Standard Specification for bull-head rails was revised last year in order to cover the medium manganese quality of rail steel which by then had come into such extensive use, that a corresponding revision of the flat-bottomed rail specification could not long be delayed. As, reviewed on page 29 of this issue, the new specification, B.S.S. No. 11/1936, abandons the previous lower carbon composition, and specifies two qualities only, one corresponding to the old higher carbon quality, but with a manganese minimum (0.70 per cent.) as well as a maximum (0.90 per cent., which is slightly higher than before), and the other a medium manganese rail containing from 0.90 to 1.20 per cent. manganese, but 0.05 per cent. less carbon, as in the re-

vised bull-head rail specification. For rails weighing 50 lb. per yd. or less, the carbon content is reduced by 0.05 per cent. In the tensile test the unnecessary upper limit of breaking strength has been removed, but, somewhat incomprehensibly, in view of the increased toughness imparted by the higher manganese content, the minimum permissible percentage of elongation in the tensile test with medium manganese rails has been reduced from 10 to 9 per cent. In view of the high elongations which are now a common feature of medium manganese rail tests, an increase, rather than a reduction of the minimum, would have occasioned no surprise.

* * * *

Railway Bridgework in Belgium

The electrification of the Belgian National Railways between Brussels and Antwerp involved certain re-arrangements and widenings of the existing lines and also the abolition of all level crossings. This included an extensive programme of earthworks and bridge building of reinforced concrete, steel and composite construction. In an article in the January issue of the Bulletin of the International Railway Congress Association, M. R. Desprets describes these bridges, the shorter of which were made of straight girders and the longer ones usually of bow-string girders. Two unusual features adopted were (1) the construction in long footbridges of the supporting columns at one end in such a way that they act as rocker posts or expansion bearings, and (2) in bridges over roadways the incorporation of the footpaths in the abutments. The latter method has the effect of reducing the length of the main girders to a span sufficient for the carriage-way, and of making tunnels for the footpaths through the abutments. In the same article, details are given of a Vierendeel span of 207 ft.; the lifting of the railway 23 ft. over an existing river arch span by building a series of smaller arches on the top of the old structure; the widening of a five-span river bridge without enlarging the piers; and a few remarks about long retaining walls.

* * * *

More L.N.E.R. 2-8-2's

As already announced in these columns, a further series of 2-8-2 type express passenger engines, four in number, is now being completed at the Doncaster works of the L.N.E.R. These engines are similar to the *Cock o' the North* and *Earl Marischal*, which were put into service on the Scottish lines of the L.N.E.R. in 1934; the new series incorporates certain modifications dictated by experience with the earlier class. The cylinders, wheels, and motion are the same, and so, substantially, is the boiler, but in these new engines the front end has been designed on similar lines to that of the *Silver Link* type engines, which has been found particularly successful in lifting the smoke clear of the cab windows. There has been a moderate increase in the superheater area, the heating surface being now 776.5 sq. ft. as compared with 635.5 sq. ft. of the former type, and this results in the total heating surface of the boiler being raised from 3349.5 to 3490.5 sq. ft., an augment of 141 sq. ft. all of it in the superheater. The boiler of the fourth engine will be slightly modified in its proportions, having a longer combustion chamber giving a firebox heating surface of 253 sq. ft., and a firebox volume of 319 cu. ft. The new engines will be extremely useful in supplementing the work of their predecessors in what is a very arduous task calling for plenty of boiler power and tractive effort. We know from experience that this L.N.E.R. 2-8-2 class is lively in getting away under load, and also in handling trains on steep up grades—assets which, in the circumstances, have a very clear value.

The G.W.R. and South Wales

IN our issue of May 29 we published an article from the *Great Western Railway Magazine* by Sir James Milne, in which he dealt at some length with the principal reasons for the acute industrial depression which has existed for some years in South Wales and Monmouthshire, and expressed the view that the only solution to the unemployment problem in those important districts was to find some means of bringing about a revival of the coal, iron, steel, and transport industries in that area. On the following day the *Daily Telegraph* commented on the subject and in a leading article urged Sir Robert Horne, as Chairman of the Great Western Railway, which is so vitally concerned in the restoration of prosperity to South Wales, to take the initiative and call a conference of the coalowners and the leaders of the iron and steel and other industries, together with any outstanding men of marked vision and energy, for the purpose of discussing ways and means of assisting the revival of the old industries and the creation of new ones. This proposal has met with general acceptance and accordingly Sir Robert Horne and the members of the board of the Great Western Railway have now invited the leading industrialists of South Wales and Monmouthshire to attend a conference at Paddington on Wednesday, July 8, to discuss the industrial position in that area. The conference will be attended by the Rt. Hon. the Earl of Plymouth, together with influential members of the South Wales coal, iron, and steel traders, Members of Parliament, representatives of local Chambers of Commerce and Trade, and the national and provincial press. Previous efforts to relieve the acute depression by the attraction of new industries to the area have proved unsuccessful, but Sir Robert will have the good wishes of all men in his effort to get all those interested in South Wales to exert their influence and power to secure the restoration of the major industries to their former prosperity, after which the attraction of new industries should become decidedly easier.

Design on the Railways

IN the April issue of "Design for Today" Mr. George Dow, of the L.N.E.R., replies to an article on railway stations in the February issue of the same journal. The article evidently grieved Mr. Dow, for he says "would not a constructive criticism, rather than a destructive diatribe which accuses the railway directorates of incompetence and the railway companies of making 'timid efforts to improve conditions . . . to quieten criticism of deficiencies in other respects' and which sweepingly associates beastliness and squalor with *all* British railway stations and their environs, have been of greater interest and value to readers." Mr. Dow admits that most of our stations stand in depressing and squalid surroundings, but he points out that they were forced to the outskirts of towns by the exorbitant prices charged for land, and goes on to say that "industrial development, in all its Victorian hideousness, quickly took place around many of the stations." In that sentence Mr. Dow lays bare the root of the matter. The stations themselves were also designed in the Victorian manner, and to modern eyes that style is "hideous," and few will disagree with Mr. Dow's statement that it will take years before the bad characteristics of the Victorian era can be eradicated.

Rebuilding, or remodelling, our stations will be a great task and will cost much money, but that fact does not make adverse criticism unjustified, and if Mr. Dow asks for constructive criticism all that can be said, in the circumstances, is—rebuild as soon as you are able to do so.

On the York-Northallerton line Mr. Dow's own company has made a delightful job of the new stations, which show up the unattractiveness of, say, York station, defended by Mr. Dow on the score of its brightly painted pillars and its daffodilled front. Other companies are doing similar good work, which goes to show that they feel the critics are not without reason on their side. It would be interesting to know what the public thought of our old stations when they were built; were they considered to be well designed, seeing that they conformed to the architectural mode of their times, or were they even then said to be somewhat uninviting? Today there are differing criticisms about our new stations, so perhaps the old ones, in their time, did not escape censure, though there was not then a new movement sweeping through the world of art, and architecture was pursuing a way more or less placid and uneventful. Mr. Dow considers that the future of the environs of our stations will depend on town planning, and feels that the surroundings of a railway station—as the gateway to any centre of population—can express civic pride far more adequately than any imposing block of municipal offices. But a dignified approach cannot take away the ugliness from an ugly station; on the contrary, it would throw it into stronger relief. Possibly that would not be a bad thing, as it might shame the company into rebuilding the focal point, and so justify the civilians in their civic pride.

* * * *

Rhodesia and Mashonaland Railways

IN the separate reports for the year ended September 30, 1935, recently issued by Rhodesia Railways Limited and by the Mashonaland Railway Co. Ltd. (the systems of both are operated by the former company), are reflected the satisfactory conditions prevailing in the gold-mining industry in Southern Rhodesia and the copper-mining industry in Northern Rhodesia. Gross revenue of the Rhodesia Railways for the year under review showed an improvement of £336,607, or 16.5 per cent., over the previous year. In working expenditure (including provision for depreciation and renewals) the advance was only £61,531, or 4.3 per cent., notwithstanding the increase of 344,210 tons, or 22.6 per cent., in the total tonnage of traffic, and the surplus of gross revenue over working expenditure was accordingly greater by £275,076. After providing for debenture interest, etc., there was a profit for the year of £415,680, compared with £23,684 in the previous year. Of this profit the sum of £67,428 has been placed to the rates stabilisation account and £348,252 to reserve account, which now stands at £1,040,539. For the first six months of the present financial year the working surplus shows a decrease of £87,580, chiefly because gross revenue has been adversely affected by the copper restriction scheme limiting the output of the mines, which came into operation on May 1, 1935. Operating figures of the Rhodesia Railways are compared herewith:—

	1934-35	1933-34
Miles open	1,518	1,518
Train-miles	2,953,480	2,526,838
Passengers	472,507	407,349
Tons, general goods	678,180	576,411
Tons, minerals	1,185,924	943,483
Operating ratio, per cent.	62.7	70.1
	£	£
Passenger receipts	262,673	243,548
General goods receipts	1,197,189	1,015,392
Mineral receipts	712,455	600,730
Gross revenue	2,377,716	2,041,109
Working expenditure	1,492,012	1,430,481
Surplus	885,704	610,628

Mashonaland Railway gross revenue was £185,223

higher than in 1933-34. There was a greater output of coal, chrome ore, copper, and asbestos. Working expenditure increased by £57,240, and the surplus was £135,156 greater. Operating figures are compared in the accompanying table:—

	1934-35	1933-34
Miles open	923	923
Train-miles	1,532,167	1,346,944
Passengers	226,161	216,401
Tons, general goods	475,164	457,143
Tons, minerals	912,265	702,247
Operating ratio, per cent.	65.1	70.7
	£	£
Passenger receipts	63,942	61,885
General goods receipts	567,583	499,378
Mineral receipts	701,649	582,195
Gross revenue	1,413,877	1,221,481
Expenditure	920,604	863,364
Surplus	493,273	358,117

As in the case of the Rhodesia Railways the gross receipts of the Mashonaland Company for the first six months of the current financial year have been affected by the copper restriction scheme. The withdrawal of the temporary cuts in salaries and wages on and from March 1, 1935, and the resumption of the contributions to the pension fund in respect of arrears for the three years to September, 1935, have increased the working expenses of the Rhodesia Railways and account for the relatively small decrease in expenses on the Mashonaland Railway during this six months' period.

* * * *

“Stop and Proceed” in France

REMARKABLE progress has been made with the installation of colour-light signalling in France, there being now 1,196 miles of double line so equipped, divided as follows: Est, 405 miles; État, 174 miles; Nord, 135 miles; P.L.M., 57 miles and P.O.-Midi, 425 miles. There, as elsewhere, the passing of signals at “stop,” occasionally unavoidable, has been a somewhat vexed question, the regulations on the subject differing on the various lines, particularly as regards the treatment of signals which from any cause may not be showing any light at all. Monsieur Lemonnier, Assistant Operating Superintendent of the État, has explained in an article in the *Revue Générale des Chemins de fer* the proposals now recommended for general adoption. “Stop” will always be commanded by a single red light. Automatic signals will show in addition a small white marker light at all times. Controlled and semi-automatic signals will show a small red marker when the controlling lever is normal, and a white one at other times. These markers will be run off trickle-charged accumulators, and will not depend entirely on the main supply. If the main light is red, or out, a signal with a white marker may be passed under the caution rules, but a red marker will indicate that the signalman's permission is required. To meet the rare case of the marker failing, or both lights doing so—considered practically impossible—automatic signals will have a plate marked “F” (*franchisable* = passable), and other signals one marked “Nf” (*non franchisable* = not passable) to indicate whether the “stop and proceed” rules may be applied or not. As the entering of blocked sections under caution has generally been allowed in France with manual signalling, these arrangements do not introduce any new principle, and should no doubt be satisfactory. Telephones at all signals and the indication of all track circuit sections are evidently not contemplated.

Electro-Pneumatic Signalling

FOR some years not much had been heard on a subject which at one time occasioned lively discussion, viz.: the relative merits of electro-pneumatic and all-electric power signalling, until it was ably revived in the reasoned defence of the electro-pneumatic system contained in Mr. R. S. Proud's paper presented to the Institution of Railway Signal Engineers on May 20. That system was chosen for the District Railway, when being electrified, and for the tube railways which followed, but the Metropolitan adopted the all-electric system, which was also installed on the Edgware extension of the Hampstead tube. The London Passenger Transport Board has thus had considerable experience of both systems, and has come to the conclusion that the electro-pneumatic, in the improved form now available, is most suited to its particular requirements. Although many air worked signals remain, light signals are superseding them, leaving only points, train stops, and subsidiary signals air operated, for which some extremely compact and simple mechanisms have been developed. Mr. Proud gave some interesting figures from the failure records, which, he contended, justified the views of the L.P.T.B. Signal Department. There is often a tendency in general arguments of this kind for the discussion to be too indefinite to be useful, because of the admitted difficulty of making exact comparisons. To arrive at scientific results, rival systems, be they what they may, must be compared under equal conditions, especially as regards standards of installation and maintenance. The L.P.T.B. being in a position to do this, considerable weight must attach to the opinions advanced by Mr. Proud, and unless they can be met by others, as carefully formed from experience gained under identical conditions, we imagine that he and his colleagues will not feel disposed to change them, whatever arrangements other lines may for good reasons prefer.

* * * *

The Second Line of Defence

SEVERAL collisions have occurred lately in which the efficiency of the tail light has been an important factor. At Welwyn, where a mistake in block working caused irregular admission of a train into an occupied section, the tail signal of the train in front was aptly termed by Lt.-Col. Mount in his report, the “second line of defence.” If, as is usual, the ordinary oil tail lamp or signal is properly cleaned and adjusted, it serves as a notification to signalmen and other observers that a train is complete, and for this purpose may be considered as reasonably satisfactory. But in cases of collision—Three Bridges, Welwyn and perhaps Shrivenham are recent examples—we may well ask ourselves if this important signal has received the attention it deserves. It seems a little inconsistent that so much should have been done to make the ordinary signals very strong by, for example, using colour-light units, while so little effort in this direction has been bestowed on the second line of defence. Sweden has adopted acetylene flashlights, which, judging by the specimens at the recent Brussels Exhibition, are very effective. On at least one Indian railway, too, electric tail lights are now used with passenger stock and considered satisfactory. In view of the scientific knowledge at our disposal today, there seems no reason why the second line of defence should not be made very strong, and we consider that this task should be undertaken.

In this country, where the goods stock is still mainly unbraked and loose-coupled, with a much greater liability

to train partings or breakaways, the problem of providing an efficient tail signal for goods brake vans is the most serious and also the most difficult. One solution might be the standardisation of a more powerful type of oil tail lamp such as is used on Continental railways and having a circular wick, glass chimney, and large reflector. But even in the case of passenger trains, we still adhere to the rather primitive type of oil tail lamp. If neither the Swedish nor Indian fixed electric type of tail light recommends itself to railway authorities, the difficulty can be—and is on the majority of Indian railways—got over by the provision of two electric side lights in each passenger brake van. These show both ways, with red slides for placing inside the rearward lenses, according to the direction of travel. The reliability of these side lights is assured, as they also have a window into, and provide a considerable amount of illumination for the guard's van. They are run off the ordinary train lighting sets, and are cheap to instal and

maintain. With two such powerful lights, one is always visible at a considerable distance irrespective of curvature, and if vans or other vehicles have to be attached behind the brake, the ordinary oil tail lamp can be transferred to the last vehicle, to show that it is the last. There is no limit, within reason, to the number of vehicles that can be attached behind the brake, giving elasticity not available where fixed electric or other tail lights are used, and yet ensuring that at least one powerful electric red light, as well as the tail light, is protecting the train as an efficient second line of defence. Another alternative is the use of the Great Indian Peninsula pattern detachable electric tail lamp illustrated and briefly described on page 248 in our issue of February 7 last, but so far we have had no report as to whether it is giving satisfaction in service. Any of these tail signals would, we think, have assisted in the protection of the front train at Welwyn and in other similar instances of rear collision.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

The Taff Vale and a Predecessor

87, Harrow View,
Harrow, June 30

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Your correspondent, Mr. W. Noel Jackson, whose letter appeared in your issue of June 26, asks whether records have survived of precisely when the Penydarnen Tramroad was opened. The answer is in the affirmative. The tramroad was constructed in the year 1800 for the conveyance of limestone from the Morlais Castle collieries to the Plymouth Company's furnaces and of the manufactured iron thence to the canal at Navigation. It remained in use until 1875, but the tramplates were not removed until 1890. An interesting letter also survives written by Samuel Homfray to Simon Goodrich of the Admiralty. It is written from Penydarnen Place, Near Cardiff, dated February 27, 1804, and says:—

"I have the satisfaction to inform you that the tramroad engine goes off very well—we have made a journey on our tramroad 9½ miles in length. It took 10 tons long wt of iron and about 60 or 70 people riding on the trams which added 4 or 5 tons more to the weight. It goes very easy 4 m.p.h. and is as trackable as a horse, will back its load and move it forward as little (and slow) at a time as you please. With this engine we can make a difficult trial and I am now preparing a pump to lift water, a barrel to wind a ball up and down."

Yours faithfully,
D. V. LEVIEEN

A Commendation and a Criticism

The Ridge, Frodsham,
June 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was greatly interested in your recent note on the efforts made on the L.M.S.R. to keep time on occasions of special pressure of traffic. I myself travelled by the relief 5.25 p.m. up from Liverpool on the Thursday before Easter. The train was double-headed from Crewe, and although 16 min. late at Ditton, arrived at Euston within 20 min. of the advertised time, the net time from Crewe to Willesden being something a little under 2 hr. 10 min. allowing for all "out of course" delays.

Even more striking, however, was the standard of accommodation provided, the train being composed almost entirely of the latest stock, instead of the "museum pieces" one encountered formerly on relief trains. Third class diners were accommodated in the newest saloons seating 4-a-side,

so that large numbers of passengers were provided with an excellent meal in perfect comfort, in spite of the fullness of the train. If only the railways had in the last few years given the same thorough attention to bringing their timetables up to date that they have given to modernisation of rolling stock, especially on the L.M.S., passenger train services in Great Britain would be second to none.

Yours very truly,
W. G. POLACK

Improved Service from Glasgow to Inverness

London, June 30.

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was amused to read the paragraph entitled as above on page 1136 of your issue for June 12, for history is once more repeating itself—though with a difference. In the summer of 1900, the old Highland Railway gave a service off the 10 a.m. from King's Cross and 10.5 from Euston at 8.15 p.m. from Perth to Inverness in 3½ hr., which not only provided a day journey from London to Inverness in 13 hr. 25 min. as against the 14½ hr. journey by the 7.25 a.m. from King's Cross, which the L.N.E.R. features in its July announcements, but also gave a day service from Inverness (8.50 a.m. as against 8.30 today) to Glasgow and back with 4½ (not 2½) hr. in the latter city!

No doubt it may fairly be claimed that a service from Perth to Inverness so late as 8.15 p.m. would appeal only to a small number of long-distance passengers, but has not a great opportunity been lost to re-establish communication with Inverness by the 10 a.m. from King's Cross? On the 5.15 summer arrival at Waverley, with nothing faster than a pre-war 65-min. run from Edinburgh to Perth, a departure from Perth at 6.40 for Inverness, off the 5 p.m. from Glasgow, would have been quite feasible. There need have been no marshalling complications at Waverley, for the Perth carriage could have continued to run on the 10.5 from King's Cross, provided a through carriage were given on the suggested 5.20 from Edinburgh to Inverness, and 5 min. would be a sufficient margin for transfer from the down main at Waverley to the adjacent bay, in view of the perfect timekeeping of the non-stop from King's Cross. And it may be remarked that although the timing of the new 4.30 from Glasgow avoids the labour of alteration to the 5 p.m. batch of departures from Buchanan Street, the new train will have to negotiate crossings with the up expresses from Inverness on the single-line sections from Stanley to Blair Atholl, some of which difficulty a later timing from Glasgow might have saved.

R. E. CHARLEWOOD

PUBLICATIONS RECEIVED

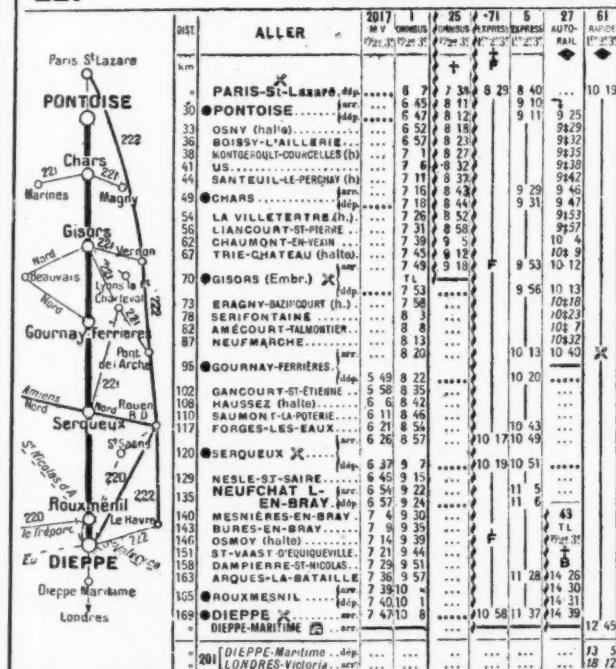
Indicateur Chaix (The French Official Railway Timetables). Paris: Imprimerie Chaix, 20, Rue Bergère. 10 in. $\times 8\frac{1}{2}$ in. $\times 1$ in. 738 pp. Fr. 10.—These timetables are now appearing in a greatly improved, simplified, and uniform style as the result of a thorough revision in which all the great systems have collaborated. After a preliminary study, the revision was definitely undertaken a year ago and was completed in readiness for the changes in the summer services which came into force on May 15. The improvements will certainly be appreciated by travellers, who will now find it a comparatively easy matter to obtain any required information about trains and be less likely to lose themselves in a labyrinth of detailed and involved indications as often happened when the old timetables were consulted. The complete collection of French timetables, known as the *Indicateur Chaix*, is published in a volume of about 850 pages, 22 by 25 cm. (approximately $6\frac{1}{2}$ in. by 10 in.). This format was adopted as most convenient for printing purposes. The volume is sold at 10 francs. The complete collection is made up simply by binding together the separate volumes for each system.

These smaller volumes of the same format are sold separately for a few francs. They are folded in two ready to slip into a pocket. One volume comprises the *Est* and *Alsace-Lorraine*

ETAT - 38

221

PARIS-SAINT-LAZARE



Specimen from a page of the new "Indicateur Chaix"

timetables in combined form, while the P.O.-Midi, Etat, Nord, and P.L.M. tables appear separately. The transformation of the timetables cost a million francs (about £13,000) for general expenses, new material, maps, diagrams and new clear type. This expenditure will be rapidly offset by the cheapness of the new method of preparing station posters showing the timetables. These posters are now printed from enlarged photographic reproductions of the timetables as they appear in the *Indicateur Chaix*. The ratio of enlargement varies from 1·3 to 1·5, and has been selected to make the type easily readable without unduly increasing the size of the poster. The ratio varies for each railway system or for the different schedules. Composite posters may comprise a number of pages from the book of timetables. The reference numbers will thus be the same for the posters and the book.

Formerly the timetables for the various railway systems followed different arrangements of the matter, different styles of numbering the schedules, and different reference signs. Now all the documents furnished by the railways are established on a uniform model. The numbering of tables is consecutive throughout the complete collection of timetables of the *Indicateur Chaix*. For this purpose a block of numbers is reserved for each railway system. To obtain a unified system it was necessary

merely to re-adjust all the international schedules and those for the inter-connecting lines of the French systems in order to avoid repetition and establish alphabetic sequence.

All the foot-notes have been grouped and presented in a uniform and more convenient manner. They are edited in a style as clear and simple as possible. All conventional reference signs appear on the first page. International signs recommended by the Vevey Conference are given the preference. General information, hitherto scattered at random among the time-tables, has been

collected and is given on coloured pages in a condensed but clear form. Particulars not absolutely necessary, such as times of meals in restaurant coaches, have been eliminated.

Marginal diagrams of the railway lines are a great aid in reading the timetables. All connections with other lines are readily seen in the diagrams. At the same time the diagram gives the number of the timetable for the connecting line. Tracing times of trains across a page is made easier by means of five black-face dots in the vacant spaces opposite the chief stations. Wavy lines indicate trains running only on days specified by the reference signs.

The new maps are much improved. On a fourfold sheet the complete *Indicateur Chaix* gives on one side a map of the French railways and another of the connections between the systems. On the other side is a map of international railway lines of direct interest to France. The three maps are printed in four colours. Each railway's separate book of timetables presents a clear map of the system on the front cover, and on the inside of that cover another map of connections with other systems.

All the French railway timetables are printed on white paper, the international schedules on blue, general information on yellow, motorcar services on pink, and advertisements on green paper at the back of the volume. In the complete collection a coloured page of thick paper shows where each system begins, blue for the Etat, green Nord, violet Est-Alsace-Lorraine, pink P.O.-Midi, and straw-colour P.L.M. Railcars occupy their proper place intercalated between the trains in the timetables, and are particularly prominent on the Etat lines to Havre and Cherbourg.

The Cotswold Country. By Maxwell Fraser. London: Great Western Railway, Paddington, W.2. 7½ in. x 5 in. 54 pp. Illustrated. Folding map. Paper covers. Free.—Miss Maxwell Fraser, like all Cotswold enthusiasts, is jealous of her subject. "Here and there red bricks and tiles have been allowed to creep in," she writes—and then adds in indignation, "a shameful thing"! In the Cotswolds grey alone can be tolerated, the grey which gives incomparable charm to Broadway and Chipping Campden and the host of little villages that lie scattered in the neighbouring valleys. But it is not only upon a local colour that the unique characteristics of the Cotswolds depend. The appearance of the offending red bricks and tiles is also a sign of the times, the threat of the encroachments of new modes of life upon a sanctuary of English yeomanry. Miss Fraser's account of this survival of a former English scene, served almost exclusively by the Great Western Railway, is most attractively presented. The text, moreover, is enhanced by the excellent selection of photogravure illustrations. A railway map of the Cotswold country is also included.

THE SCRAP HEAP

The Ladies' Shore Commuters' Club has just celebrated its first anniversary at Red Bank, New Jersey, U.S.A. It was formed last year when a club car was provided on the trains patronised by these ladies on their way to and from New York. The women have purchased fly screens for the car and have installed a kitchenette.

GET OFF AND PUSH

Mr. W. G. Besler, Chairman of the board of the Central Railroad of New Jersey, has sent our American contemporary, the *Railway Age*, a reproduction of a ticket issued by the Elizabethtown & Somerville about 1848, which contains the following provision: "The passenger to assist the conductor on the line of road whenever called upon." Mr. Besler also states an old-timer once informed him that, on rainy days on a summit on the Chicago, Burlington & Quincy in Missouri, it was the regular practice to require all male passengers to stand on the car steps going over the hill and, if the locomotive stalled, it was their duty to hop off and push.

* * *

On Friday, Mr. Dixon, auctioneer of this city (Paisley), sold by auction three engines recently employed by the Renfrew & Paisley Railway Company. One of them the auctioneer stated was the second locomotive used on the rail for the transmission of passengers in Scotland, having been built about eighteen years ago at Newcastle, by the late celebrated George Stephenson, for the Garnkirk Company, and thence transferred to the Paisley & Renfrew Company. The wheels were of wood, and altogether the contrast exhibited to the beautiful and powerful locomotive of the present day, was very striking. It realised £13; the original cost was somewhere about £750.—From "The Times" of December 28, 1848

* * *

RAILWAYMEN TO THE RESCUE

Recently an L.M.S.R. signalman at Carmyle, Lanarkshire, looking from his cabin window, saw a raft capsize, and throw five young boys into a pond. An express was signalled at

the time, and he could not go to their rescue. He sent a telephone message to the sheds half a mile down the line and a light engine was rushed to the scene. Three of the boys had managed to scramble to safety by the time it reached the spot, but the remaining two were still in the water, and were almost exhausted. William Williamson, a shunter, succeeded in dragging them to the shore. Artificial respiration had to be applied to revive one of them. The boys subsequently had their clothes dried before the signal cabin fire.

THREE BIG CHANGES FORECAST FOR THE RAILWAYS

Mr. F. H. Willis, Secretary of the Southern Railway, who retired last Tuesday, told a special representative of the *Evening News* what he expected to happen to the railways of the future. He visualised three important changes:—

An amalgamation of the four main-line companies;

Control by the railways of all the transport of the country outside the London Passenger Transport Board area;

Electrification of all lines within 100 miles of London.

Speaking of his first suggestion, Mr. Willis said "If 140 odd railway companies can be made into four—why should not the four be made into one? I believe that that will happen, and if it does I believe the railways will work even more economically than they do today. I believe also that the railways will control the whole of the transport of the country, except, of course, that in the London Passenger Transport Board area. I think they should do so, too."

He thought it would be found an economic proposition to electrify every line up to within 100 miles of London. The electrification of the Southern Railway lines has proved an enormous success, and with a big suburban population as served by that company it had been the railway's salvation. It was anticipated that the electrification of the line to Portsmouth would be as successful as that to Brighton.

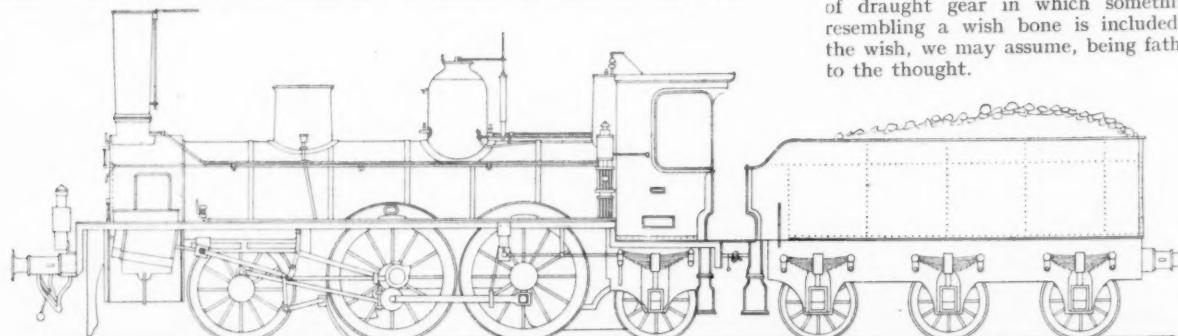
"IMPROVEMENTS" IN VALVE GEARS

Many and varied have been the attempts to improve the design of locomotive valve gears. Some, we may assume, have profited their originators, others the Patent Office alone. The one illustrated is not likely to do either.

Much ingenuity, a great deal of it, alas, misplaced, has from time to time been expended in the effort to produce a motion that will economise 75 per cent. in fuel and cost little or nothing to maintain. It has, however, been left to a professional architect to devise a gear that can be guaranteed *not* to work, and therefore to cost nothing to maintain. It is shown in the sketch reproduced as applied to a French 2-4-2 type engine, vintage 1870, when *everything* in France was topsy-turvy, the war against Prussia being then in progress. It may even yet take shape, and to the accompaniment of "noises off" or on, or both, appear before an admiring audience in a film production.

The engine, which will, we understand, be constructed mainly of wood is, as the sketch shows, fitted with the weirdest motion ever devised by man. The expansion link is solidly fixed to the slide bars, whilst the small end of the connecting rod is joined to one of the spokes of the leading wheel. The valve rod links up with what presumably is intended to be the crosshead, while the combining lever and union link, although not strictly justifying these titles, leads nowhere in particular and is incapable of performing any function useful or otherwise. An eccentric drive, properly so named in this case, is used to actuate rods of a nondescript type, and not to be outdone by its neighbours the big end of the connecting rod appears to be a bolted fixture incapable of independent movement.

The coupled wheels have tyres at least 6 in. in depth, probably in anticipation of the balloon tyres which invaded the automobile market some years back. It may be, of course, that the use of some kind of flexible material possessed of unlimited elasticity in all directions was contemplated by the draughtsman, who, to cap all and presumably so as to provide an index to his true feelings, uses a form of draught gear in which something resembling a wish bone is included—the wish, we may assume, being father to the thought.



Design for a "facsimile" French locomotive of 1870, to be used in a forthcoming period film. Its notable valve gear is considered above

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

INDIA

Burma Railway Committee

The Burma Government recently appointed a special committee to report on the administration of the Burma Railways after the separation of Burma from India. It is understood that the committee has completed its investigations and that a report is under preparation.

B.B.C.I.R. Electrification Progress

Satisfactory progress is being made with the electrification of the Borivili-Virar section of the B.B. & C.I.R. [see THE RAILWAY GAZETTE *Electric Traction Supplement*, March 8, 1935.—ED.], and it is expected that conversion will be completed by August. The work is being carried out by the railway, and the overhead structures have been fabricated in the railway workshops from old rails.

New Railway Project in South India

An agreement has been reached between the Governments of Cochin, Travancore and Madras on the question of administration of the Cochin Harbour. The fourth stage of the harbour development scheme is, therefore, shortly to be undertaken. This has led to the revival of the project for the construction of a railway line from Kollengode to Trichur, about which the Government of Cochin is understood to be negotiating with the South Indian Railway administration.

Solar Eclipse Fair

The solar eclipse that takes place on June 19 will be visible only in certain areas, and the sacred places on the River Ganges lying within the area of visibility will attract large crowds of Hindu devotees. Special arrangements are being made at Kurukshetra on the North Western Railway for the convenience of pilgrims in connection with the Solar Eclipse Fair. Additional waiting and refreshment rooms are being provided at various stations, and the Kurukshetra station enclosure will be temporarily roofed to protect the pilgrims from the sun. Boy Scouts will be available to help and guide the travellers, and with this end in view the railway proposes to instal microphones and loud speakers. Other facilities include the provision of good drinking water, medical attendance and adequate sanitary arrangements. Return tickets at specially reduced rates will be available on most railways.

East Indian Railway Traffic

At a recent meeting of the Calcutta Advisory Committee of the East Indian Railway, the Agent pointed out that the approximate working expenses of the railway for the year

ended March 31, 1936, were Rs. 3 lakhs more than in the previous year, though the earnings were Rs. 14 lakhs less. He explained that this apparent increase was due to the fact that the railway had carried over seven million additional maunds (say 25,000 tons) of goods during the year. Further, the figures for working expenses included Rs. 18 lakhs due to the restoration of the 5 per cent. cut on wages and salaries. The working expenses, therefore, were, on a similar basis, actually Rs. 15 lakhs less than in the previous year, and, in view of the increased tonnage handled, the saving was really greater. The decrease in earnings, in spite of the increased tonnage handled, was due to the decline in the average lead and to the reduction in the surcharge on coal.

SOUTH AFRICA

Capital and Betterment Expenditure

The estimated expenditure on capital and betterment works for the year 1936-37 is £12,430,014, an increase of £2,094,345 on the previous year. Of this amount £5,185,612 will be provided from Loan and Betterment Funds and £7,244,402 from Renewals Fund and working votes. The allocation of this expenditure is as follows:—

	From Loan and Betterment Funds	From Renewals Fund and working votes
Construction of railways	51,445	—
New works on open lines	3,992,355	3,702,363
Rolling stock	170,935	2,980,885
Road motor services	36,276	142,553
Harbours	520,930	418,601
Airways	118,000	—
Working capital	42,671	—
Unforeseen works	250,000	—

ARGENTINA

National Railway Pension Fund's Claim against B.A. Provincial Railway

One of the difficulties which beset the National Railway Pension Fund is that of collecting the contribution of 8 per cent. on the salaries and wages bill, which all the railways are required to pay into the fund. The Pension Fund authorities recently brought an action in the Supreme Court against the Government of the Province of Buenos Aires, in its capacity of proprietor of the B.A. Provincial Railway, to enforce payment of the sum of \$1,031,467 paper, due to the fund by the railway. The Provincial Government protested against the payment of the amount in question, on the grounds that the Pension Law specifically stated that the

quota of 8 per cent. paid by the railways should be derived from an increase in tariffs, sanctioned by the Government for this purpose, and not paid out of revenue. The Provincial Railway had made no increase in rates for this purpose. In giving its decision, the Court overruled the arguments of the defence, on the grounds that the matter being one of public urgency the Pension Fund authorities were within their rights in demanding payment of the contribution. The Supreme Court therefore ordered the Provincial Government to pay the amount in question into the fund within 180 days, plus interest at 7 per cent.

Refund of Excess Freights: Legal Decision in Favour of B.A.G.S.R.

The Federal Court recently decided in favour of the B.A.G.S.R. in an action in which that company was sued by a private firm for the refund of \$189,527 paper, being freight on the transport of petroleum, with which the plaintiffs alleged they had been wrongly overcharged by the railway. As the amount in question was distributed over the period between 1920 and 1928, and the claim was not lodged until 1931, the company legitimately invoked Article 9 of Law 10650, which establishes that claims for the refund of railway freight must be made within 12 months of the carriage of the goods, and in this plea the railway was upheld by the lower court. The plaintiffs then appealed to the Federal Court on the grounds that the law entailing refusal to recognise the validity of such claims after the lapse of one year was unconstitutional. The Federal Court also gave a verdict for the railway. In pronouncing this decision, the presiding judge pointed out that the law on the point was quite clear and free from any ambiguity, and left no room for doubt in regard to its precise meaning and application. On these grounds the appeal was dismissed.

Anglo-Argentine Tramway Situation and its Effects on Employees

The Anglo-Argentine and Lacroze Tramways are still operating under the adverse conditions which have crippled them for some years; their receipts are still on the down grade owing to the increasing competition from other classes of city transport, chiefly the "micro-buses" (*colectivos*), which have become so numerous as to constitute an impediment to other forms of vehicular traffic, while their reckless driving has been the cause of so many accidents that the police authorities have been compelled to make special regulations for their more efficient and rigorous control. Although the opening of the new C.H.A.D.O.P.Y.F. subway from Retiro to Plaza Constitución has been of benefit to the City of Buenos Aires, by relieving to some extent the traffic congestion in the streets, it has been detrimental to the interests of the Anglo-Argentine Tramways by diverting a certain amount of

July 3, 1936

its surface passenger traffic along this route to the new underground line.

On May 25, the customary distribution of medals to employees of the Anglo-Argentine Tramways Company, who had completed 25 years' service during the previous 12 months, was held in the administration offices. The Chairman of the local board (Dr. Tito L. Arata) who presented the awards, referred to the critical financial position of the company. He said that the outlook for the Buenos Aires tramways was dark, unless effect was promptly given to the measures embodied in the Transport Co-ordination Bill, which had been before Congress for three years, and he reminded the employees present that their own welfare was closely bound up with the fortunes of the company. Dr. Arata stated that if the company should be unable to withstand the dangers that threatened it, not only would all possibility of any improvement in working conditions disappear, but the employees might even lose their jobs, with the result that ruin and desolation would overtake them and their families. He added that they were hoping for a solution of their difficulties through a legal co-ordination of transport.

Foreign Residence of Railway Pensioners

A Presidential decree, granting to a number of railway pensioners the customary permission to reside abroad for two years, declares that in future all petitions for an extension of this concession must be addressed to the Ministry of Public Works, instead of, as hitherto, to the Pension Fund authorities, on special forms giving the following particulars regarding the personal status of the applicants:—

(1) Number of years of absence from the country; (2) Amount of pension; (3) Age of pensioner; (4) Nationality; (5) State of health; (6) Qualifications of pensioner; (7) If petitioner has a family dependent upon him or not; (8) If petitioner has a family dependent upon him in the Argentine; (9) Property owned by petitioner. In the event of the replies to any of these questions being found to be untrue, leave to reside abroad will be cancelled.

The Preamble to the Decree

The preamble to the decree points out that it has always been the opinion of the Pension Fund Board that the terms of the Pension Law (No. 10650) did not permit of the beneficiaries of the fund residing abroad in any circumstances; and in this view the executive power concurred, inasmuch as several of the articles of the Law distinctly stated that pensioners could not reside outside the country without permission from the Government. It was for this reason (a) that the maximum period of continuous foreign residence had been fixed at two years, on the expiry of which application for its renewal had to be made to the authorities, and also (b) that a small deduction should be made from all pensions paid to retired railway employees living

abroad, in view of the fact that the pension was being spent outside Argentina. As the Government did not consider that it was sufficient for applicants to specify merely the length of time during which they wished to continue to reside abroad and the amount of their pensions, they would in future be required to supply the information asked for in the above questionnaire.

It is difficult to see in what way the points—most of them relating to purely personal affairs—in regard to which information is asked for in this form can possibly affect the right of railway pensioners to reside wheresoever they choose, and these new regulations seem to suggest that an attempt is to be made to revive—at least in principle—the provisions of Article 20 of the amended Railway Pension Law, which virtually threatened to deprive railwaymen of foreign birth of their pensions in the event of their electing to live outside the Republic after their retirement.

CHILE

New Station for Viña del Mar

The General Manager of the State Railways has informed the Mayor of Viña del Mar, the fashionable seaside suburb of Valparaiso, that the call for public tenders for the construction of the proposed new station at this point has been delayed by the fact that, owing to certain modifications to the plans, the calculations of the cost of the work and materials require revision. It is expected that a call for tenders will be issued about the end of June.

Importation of Motorcars Prohibited

At a meeting of the Chilean Exchange Control Committee, held on May 16, the somewhat unusual resolution was taken to prohibit, until further notice, the importation into Chile of motorcars and radio apparatus, on the grounds that the foreign exchange available was required for more urgent needs. It is stated that, during the first three months of this year, the number of automobiles imported into Chile was 1,200, as compared with 300 in the corresponding period of 1935. The period during which this restriction will remain in force was not specified, but it is understood that it will not be removed until the general commercial situation has improved.

Proposed Mining Railway for Tarapacá

According to intelligence from Valparaiso, plans and estimates for the construction of a mining and industrial railway, between Huara and Chusmiza, in the Province of Tarapacá, have been forwarded to the Ministry of Production. The cost of the work is estimated at 12,000,000 pesos (approximately equivalent to £124,000 at current exchange rates). Presumably the proposed railway is the first of a

number of small branch lines which have been suggested as substitutes for the projected international railway from the Chilean port of Iquique to Oruro, in Bolivia, the construction of which was objected to by the Railway Department of the Ministry of Production and opposed in Congress, on account of its cost, as recorded in THE RAILWAY GAZETTE of December 20, 1935.

TANGANYIKA

Receipts and Traffics

During the first quarter of 1936 (January-March) the total earnings of the Tanganyika Government Railways amounted to £123,450, as against £119,500 estimated previously, and as compared with £119,564 for the corresponding period in 1935. Comparative increases or decreases under the several heads of accounts were: Coaching +£3,145, Goods +£1,689, Telegraph and Sundries -£1,752, Steamer service -£133.

Imports on the Central line increased by 1,685 tons and on the Tanga line by 1,497 tons, while exports on the Central increased by 1,386 tons and those on the Tanga line fell by 1,200 tons, as compared with the first quarter of 1935.

CANADA

Revision of Fares

From the beginning of June passenger fares on Canadian lines have been reduced to about the pre-war level. Basic first class fares are now about 13 per cent. lower and at approximately the level in force before 1914. Day coach tickets at new rates are available for tourist sleeping cars on payment of regular berth supplements for that class of accommodation. Round trip tickets are now valid for six months instead of thirty days. The cost of standard parlour and sleeping car accommodation has also been reduced.

UNITED STATES

Exceptional Rates Bill Losses

The so-called Pettengill Bill, backed strongly by the railways and the railway labour organisations, which would have removed from the Interstate Commerce Act the prohibition against exceptional rates by the railways to meet water-borne competition (unless intermediate rates are reduced proportionately) is unlikely to be passed during the present session of Congress, now on the eve of adjournment. The prohibition which this Bill was designed to remove has deprived the railroads of all but a small part of the traffic between Pacific Coast points and the East. This traffic now mainly passes through the Panama Canal in shipping, and the railways are prevented from meeting this competition

with appropriate rate reductions, unless they will make proportionate reductions to interior points where Panama Canal competition does not exist.

The injustice to the railways is so patent that the Bill passed the lower house of Congress with a tremendous majority and indications were that a safe majority could also have been counted upon in the Senate had a vote been permitted. But the Chairman of the Senate Committee on Interstate Commerce, Mr. Wheeler, of Montana, unfortunately happens to be an advocate of Government-ownership of the railways and consequently is disinclined to do anything which might help them under private ownership. Therefore, he delayed the public hearing on the Bill so long that it could not possibly be concluded at this session, and consequently the Bill will die, despite a popular and Congressional opinion decidedly in its favour.

Large Publicity Programme Inaugurated

After long discussion the American railways have embarked on a comprehensive plan of advertising and publicity, designed to place the industry in an aggressive, instead of a defensive role in the fight for competitive traffic and against political attrition. General advertising, to be placed exclusively in national periodicals, will be in charge of the Association of American Railroads. Approximately £260,000 has been set aside by the A.A.R. alone as an initial outlay. This will be supplemented by still greater expenditures in the newspapers and local press by the individual railways.

Progressiveness of Railways

The A.A.R. advertisements, of which the first has already appeared, will emphasise the technical modernity of the railroads (which have been characterised as "backward" and "unprogressive" by many persons prominent in public life, so that the stigma has gained wide acceptance). These advertisements will be designed not only to sell railway service to the public on the grounds of the alertness and progressiveness of the companies, but will also be aimed to stimulate the *esprit de corps* of railway personnel, since the advertisements will give prominence to the part played by the staff in providing railway facilities. This national campaign by the combined railways will be co-ordinated with the local advertising of the individual railways, by the insertion in the latter of excerpts from the national advertising.

Co-incident with the increased use of commercial advertising, there will be an intensification of "public relations" efforts by the A.A.R. and the individual companies, calculated to secure a "better press" and heightened appreciation of railway accomplishments all round. Tentatively, a Public Relations Department has been recommended for the A.A.R.; this would be in charge of a vice-president and

have four sections, one on relations with the press, another on the correlation of the publicity work of the association with that of the individual railways and with that of the railway labour unions, another on relations with commercial and educational organisations (for example, to provide speakers for public gatherings), and the fourth on commercial advertising. The association is also contemplating the publication of a popular magazine to stimulate public interest in railroads and in travel by rail.

SPAIN

State Intervention

The Minister of Public Works has published a Bill dated June 5, to be presented to the Cortes, providing for a more direct intervention of the State in the administration of the railways. Under this Bill, should it become law, the State would appoint two directors on the board of each and any railway company, for every fifty millions of pesetas or fraction thereof of State capital contributed to the railway, and in addition, two directors would be appointed to represent the staff, one elected by the employees in receipt of wages not exceeding 6,000 pesetas a year, and the other by those receiving salaries between 6,000 and 12,000 pesetas a year. Both classes of directors would have full voting powers and faculties equal to those of the directors of the companies, and the intervention would be applicable to all companies, whether employing State capital or not, except that in the case of small railways the Minister may group several railways under one delegation. The delegation composed of the four directors appointed by the Government, may exercise the power of veto over the resolutions of the board of directors in every case, subject to the decision of the Minister and the Council of State. It remains to be seen how this extraordinary measure will be received by the Cortes. The mere fact that it would repeal the law of September 9, 1932, establishing the *comisarios*, seems to ensure the active opposition of the party headed by the ex-Minister of Public Works, Don Indalecio Prieto. In any case, such an obstructive measure is not helpful at a time when the railways notoriously require assistance from the Government and not hindrance in the form of further bureaucratic interference, if the public service is to be continued as at present.

Staff Demands

The National Syndicate of Railwaymen has presented all the railway companies with a circular detailing the petitions presented by the railwaymen for betterments. The petitions, or rather demands, do not err on the side of modesty. They are detailed under twelve heads, beginning with increase in pay representing about 60 per cent. on present rates, and including a 36-

hour week, weekly rest day with full pay, annual vacation of 20 days also with full pay, compulsory retirement at 55 years of age, with a pension of 80 per cent. of salary, abolition of piece-work, and full pay during sickness. Whether the syndicate or the men themselves really believe that even a small fraction of these demands is possible at the present time is doubtful, and it is always difficult to appreciate in Spain the part played by politics in such cases. The one thing that is certain is that the National Syndicate is, and always has been, a strong advocate of nationalisation, and it may be that this policy is behind the present demand. Obviously the companies could not concede a fraction of the petitions at present, when even the strongest is on the verge of insolvency, and it may be that the policy of the syndicate is to force the Government to consider the possibility of some form of nationalisation. Whether the present moment is propitious, considering the present position of the national exchequer, is very doubtful.

ABYSSINIA

Railway Development

The Italian Government is losing no time in preparing to open up Abyssinia by the construction of trunk railways. Already projects are being prepared for lines to connect (1) Mogadiscio, the seaport on the Indian Ocean, with Dolo, Addis Ababa, Lake Tana, and Gondar, and, continuing northwards, with some junction point on the existing Massaua-Asmara-Biscia line; also (2) Assab with Dessie, Addis Ababa and some point on the Kenya frontier; and (3) Massaua with Addis Ababa direct, via the Tigrai district. Actual construction work is likely to be begun this year upon (a) the first 500 km. of (1) from Mogadiscio to Dolo; (b) the Assab-Dessie section of (2) a distance of 550 km.; and (c) the Addis Ababa-Massaua line, about 1,000 km. All these lines will probably be of metre gauge.

MANCHUKUO

S.M.R. to Supply All Japan with Oil

A message from Dairen states that the South Manchuria Railway has decided upon the immediate construction of an experimental plant for the extraction of oil from coal: the primary capacity will be 20,000 tons of oil a year. Further plans are said to be under consideration for a beginning to be made in August on work for a much larger plant capable of supplying the demand of the entire Japanese nation, estimated at 3,500,000 tons of oil annually. The bulk of this quantity now comes from other countries. The new plant will be entirely Japanese, but it is understood that the British coal hydrogenation process will be incorporated in the experimental plant which will be installed at Fushun.

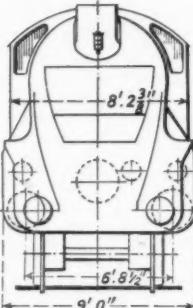
2-8-2 TYPE THREE-CYLINDER ENGINES, L.N.E.R.

This design combines the general features of the "Cock o' the North" class with the streamlined front end of the "Silver Link"

As a development of the two 2-8-2 type passenger locomotives, No. 2001 *Cock o' the North* and No. 2002 *Earl Marischal*, which were put into service on the Scottish lines of the London & North Eastern Railway in 1934, a further series of four similar engines is now being completed at Doncaster works to the design of Mr. H. N. Gresley, C.B.E., D.Sc., the Chief Mechanical Engineer of the company. As stated on page 1134 of THE RAILWAY GAZETTE of June 12, the first of these is numbered 2003, and has been named *Lord President*. The front end has been designed on similar lines to that of the *Silver Link* type engines, this external form having been found entirely successful in lifting the smoke clear of the engineman's view.

The boilers of the first three engines will be identical with that on the previous 2-8-2 type engines, but the boiler of the fourth will be somewhat altered in its proportions, having a longer combustion chamber, giving a firebox heating surface of 253 sq. ft. and a firebox volume of 319 cu. ft. The firegrate has an area of 50 sq. ft. and is fitted with narrow firebars giving 56 per cent. air space. A 43-element Robinson superheater is fitted, the elements extending to within 9 in. of the copper tubeplate. A double blast pipe and chimney is fitted in conjunction with Kylchap cowls. Access to the main smokebox door is obtained through doors in the front streamlined case, one of which lifts upwards and the other drops downwards over the buffers. The doors are hand operated through bevel gearing. A chime whistle is fitted in front of the chimney.

The three cylinders are cast in one piece, all three cylinders driving the second pair of coupled wheels. The piston rods and heads are of Class C steel forged in one unit. The piston valves are 9 in. in diameter and fitted with narrow rings. The valves of the outside cylinders are operated by Walschaert gear, whilst the inside valve is actuated through Mr. Gresley's system of two-to-one and equal levers from the outside valve spindles. The whole of the valve gear is fitted with ball and roller bearings. A Wakefield six-feed mechanical lubricator is



Front end view

used for the cylinders and valves and eight-feed for the axleboxes.

The coupling and connecting rods are of nickel-chrome steel. The leading pony truck is of the double swing link type with a translation of 5½ in. each side of the centre line. The trailing carrying axle is fitted with Cartazzi axleboxes giving a side translation of 3 in. on either side of the central position.

Vacuum brake apparatus is fitted to both the engine and tender; there being four 21 in. diameter cylinders on the tender. The boiler is fed by a Davies & Metcalfe No. 12 Class H exhaust steam injector on the right hand side, and by a Gresham & Craven No. 11 under footplate injector on the left hand side. The boiler and firebox are insulated with Alfol foil made up into the form of mattresses.

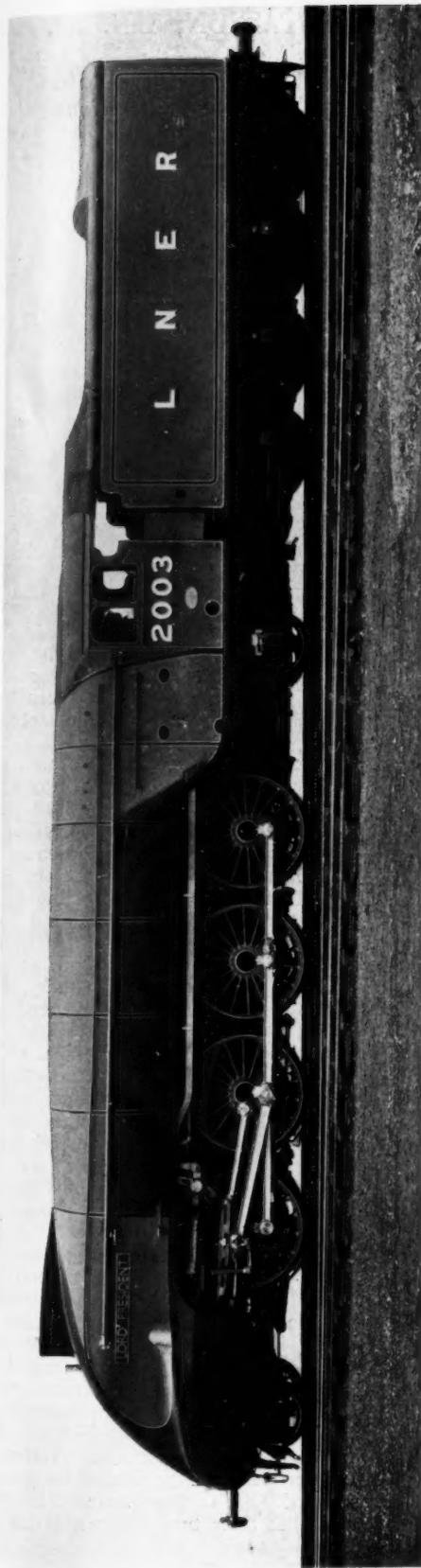
Cylinders (3), dia.	..	..	21 in.
Piston, stroke	..	..	26 in.
Piston valves, dia.	..	..	9 in.
Maximum travel of valves	..	..	5½ in.
Steam lap, inside cylinders	..	..	1½ in.
„ outside cylinders	..	..	1½ in.
Exhaust lap	..	..	nil.
Cut-off in full gear	..	..	65 per cent.
Wheels, coupled, dia.	..	..	6 ft. 2 in.
Leading truck,	..	..	3 ft. 2 in.
Trailing truck,	..	..	3 ft. 8 in.
Wheelbase, coupled	..	..	19 ft. 6 in.
„ engine	..	..	37 ft. 11 in.
„ total	..	..	64 ft. 1 in.
Boiler, maximum diameter of barrel	..	..	6 ft. 5 in.
length between tubeplates	..	..	18 ft. 11½ in.
Heating surface—			
Firebox	..	..	237 sq. ft.
Tubes	..	..	1,354.2 sq. ft.
Flues	..	..	1,122.8 „
Total evaporative	..	..	2,714.0 „
Superheater	..	..	776.5 „
Combined heating surface	..	..	3,490.5 „
Working pressure	..	..	220 lb. per sq. in.
Grate area	..	..	50 sq. ft.
Tractive effort at 85 per cent.b.p.	..	..	43,462 lb.

The engine in working order weighs 107 tons 3 cwt. and the ratio of adhesion weight to tractive effort is 4.06. The eight-wheeled tender carries 5,000 gallons of water and 8 tons of coal and weighs, fully loaded, 57 tons 18 cwt., giving a combined total loaded weight for engine and tender of 165 tons 1 cwt.

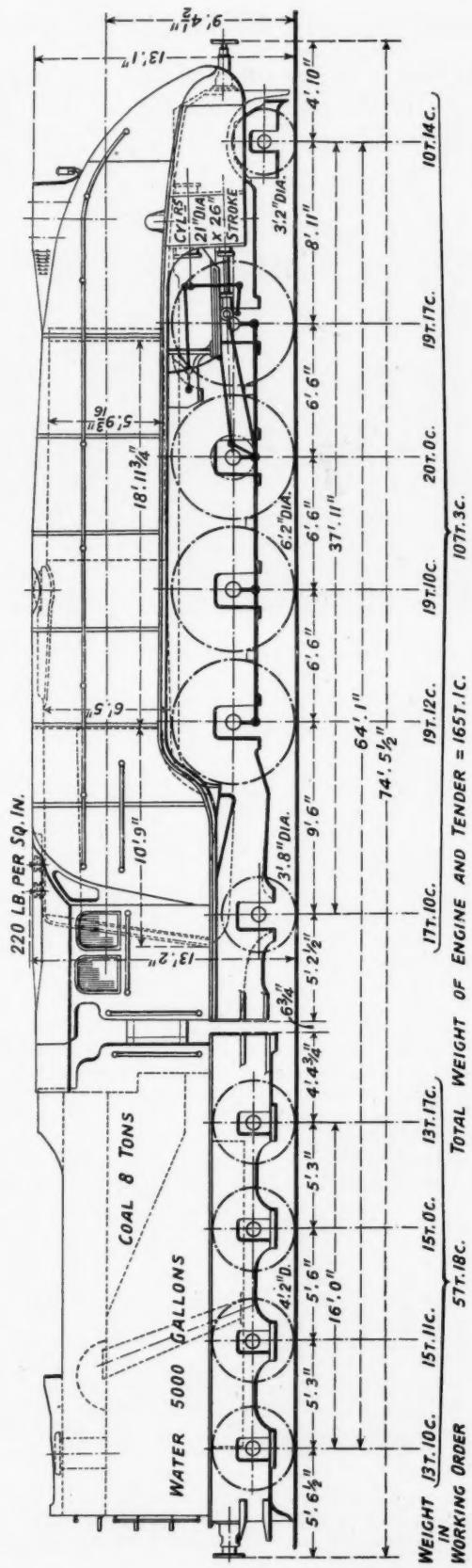
The U.S.A. Floods and Signalling

The heavy spring floods in the United States did a great deal of damage to signalling apparatus on the railways in the river valleys, as well as to the roadbed and permanent way. Most of the lines were equipped with continuous track circuit and automatic signals, while some had automatic train control, too, and as the water rose as high as 10 ft. in places a large amount of relay, battery, transformer and other relatively delicate equipment was submerged. Many signal posts and bridges, and transmission line poles, were knocked down, sometimes by barges floating off the rivers, and a few signal boxes were carried away, necessitating much work to restore things to normal. Where the signalling depended entirely on outside power supply and the power houses were flooded, the current

could not be restored for some days after trains were ready to run again, and temporary direct current working was resorted to, accumulators being used for the track circuits and signals. To economise power, men were stationed at the latter to switch them on as trains approached. Some boxes were kept going by using engine headlight generators, run from a locomotive boiler, to charge accumulators. Large forces of men were concentrated on the work of recovering equipment, cleaning, drying, and testing it; the signal manufacturers also assisted with men and emergency deliveries of essential materials, enabling the signalling to be restored in a remarkably short time. Opportunity was taken in certain cases to make changes in the layouts and install improved apparatus.



New 2-8-2 type express locomotive No. 2003, "Lord President," L.N.E.R., fitted with streamlined front end

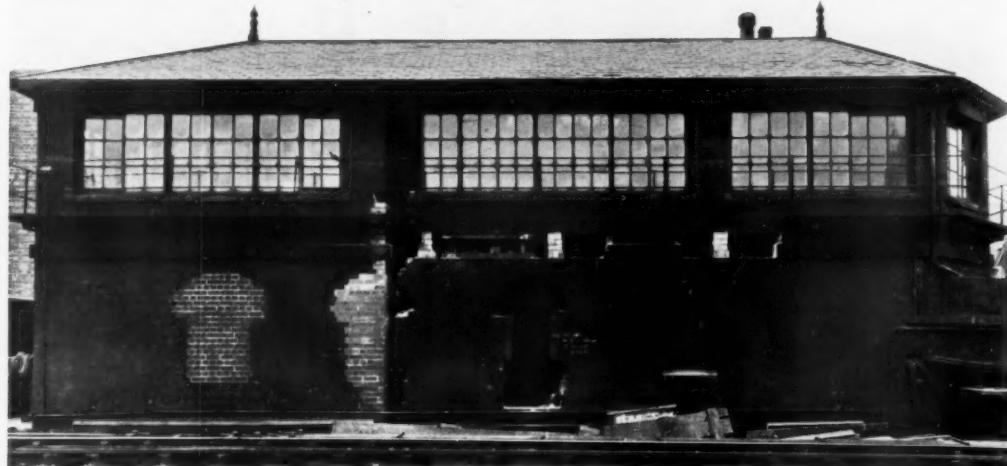


Leading dimensions and weight distribution of new L.N.E.R. locomotive

(See article on opposite page)

COLOUR-LIGHT SIGNALLING AT LEEDS NEW STATION, L.N.E.R.

As shown below, the length of the East signal box is being reduced from 53 ft. to 19 ft., thanks to the space saved by the new control panel and associated alterations



THE first part of the resignalling of Leeds New station was recently brought into use. The existing interlocking frame of 75 levers in the East signal box was disconnected, and all the existing points connected to a new 25-lever mechanical frame of the company's standard pattern for the North Eastern Area. For the control of the signals a combined control panel and illuminated diagram, with small thumb switches, has been installed over the locking frame. Interlocking between points and signals is accomplished electrically, and no mechanical interlocking of any kind has been provided. A combined lever lock and circuit closer is fitted to the mechanical levers, and the thumb switches control the appropriate normal and reverse interlocking relays.

All running signals are of the d.c. searchlight colour-light type. Where a fourth aspect is required, a supplementary multi-lens unit is provided on the top of the searchlight signal. All subsidiary signals whether for "backing," "shunt ahead" or "call on" movements are position-lights. Where these are fixed under the colour-light running signals, only an "off" indication is given, no light being shown for the "on" position as the red of the colour-light signal provides for it. In the case of other position-light shunt signals, the stop indication is given by two horizontal white lights, and the proceed indication by two white lights at 45 deg. to the horizontal in the upper left-hand quadrant.

Colour-light signals reading over more than one route are provided with route indicators of the "theatre number" type, having an amber coloured glass fixed in front of the lamps. The indications are always given when the colour-light signal displays a proceed aspect, and are also shown with the subsidiary signal when this is calling on into an occupied platform. In all other cases the subsidiary signal is given without the route indicator.

The whole of the lines controlled by the East signal box have been track circuited, and all the points are locked by the track circuits, sectional release route locking being used wherever necessary, to afford the maximum freedom in resetting a route behind a train. The

track circuits are of the a.c. reactance feed type, supplied through a small step-down transformer for each track from the 110-V. mains. The apparatus has been specially designed for the rather onerous conditions obtaining at Leeds.

All points are electrically detected at 110 V. a.c., and are indicated on the control panel. Apart from the detection and track relays, and repeat relays of these functions, all relays are wound for d.c. operation at 12 V. The relays are housed in the under portion of the signal box on open racks of angle iron and teak, with the flame-proof internal wiring on the front of the racks. All the main cables for controls, indications, and feeds are oil impregnated, and paper insulated, with lead covering and single-wire armouring; the cables from the disconnection box to the signals, detectors, tracks, &c., are of the "ite" class, and are also lead covered and armoured.

The power supply is obtained from two feeders of the Leeds Corporation network, and an automatic change-over switch has been installed to guard against loss of supply if an interruption should occur on either feeder.

The new mechanical frame and signal control panel economise space to such an extent that they can be accommodated in one end of the existing box, and it is intended to demolish the portion now no longer required. The original length of the box was 53 ft., and this will be reduced to 19 ft. when the alterations are completed. Leeds New station is the joint property of the L.N.E.R. and L.M.S.R., and is at present worked and maintained by the former company on behalf of the Joint Committee. The work, which was designed to the requirements of the operating departments of both companies, has been carried out under contract by the Westinghouse Brake & Signal Co. Ltd., to the instructions of Mr. John Miller, Engineer, N.E. Area, L.N.E.R. The scheme was originally designed by Mr. A. E. Tattersall, under whose supervision the major portion of the present work has been completed. Mr. C. Carslake, who has succeeded Mr. Tattersall, has since been responsible for the supervision.

RAILWAYS AND ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

A Few Records

IN the course of his review of the year's working at the annual meeting of Ribble Motor Services Limited, the Chairman, Mr. W. S. Wreathall, mentioned that several records in the company's history had been achieved. Its vehicles had carried 87,000,000 passengers, an increase of 6,000,000 over the previous year while the revenue had amounted to £1,316,000. Another record, not quite so pleasant to contemplate, was the amount of £238,452 that the company paid in taxation, equivalent to over 18 per cent. of the revenue. Incidentally, Mr. Wreathall mentioned that the increase in the price of petrol in May last year cost the company over £10,000 in eleven months. That lends point to the further comment when dealing with the continued acquisition of oil-engined new vehicles, that the imposition of a heavier tax on oil fuel had neutralised, to a certain extent, the benefit previously enjoyed from a cheaper fuel; the oil-engined vehicles, nevertheless, for certain traffic still showed advantages over those using petrol. The number of men employed was about 3,900, an increase of 400 as compared with the previous year, partly accounted for by expansion of business and partly by the taking over of other concerns as mentioned in our issue of June 19. It was unfortunate that during the year an accident caused the death of two passengers but it should be borne in mind that in the course of 17 years the company had carried 600 million passengers, only three of whom have lost their lives, so that Ribble safety gives the eminently satisfactory figure of one in 200 million passengers. In the recent case, too, the accident

was caused through a collision between two other vehicles one of which crashed into the company's omnibus.

The Petrol-Electric Vehicle

SPEAKING at the recent annual general meeting of T. S. Motors Limited, the Chairman, Mr. Harold E. Carter, said that the company received a trial order for 18 petrol-electric chassis to be delivered before the end of March, and delivery was duly made in spite of the short time. The vehicles had given sufficient satisfaction to bring the company a further order for 167 similar chassis, with an indication that there might be other orders to follow; arrangements had been made to provide more funds to carry out the order. The Chairman said he felt that the revival of a demand for petrol-electric chassis was particularly encouraging. He believed that a great disservice was caused to the London public when petrol-electric buses were driven from the streets. It was some years since attention was drawn to the effect of the noises of the streets on the nerves of the London public, and he thought he was correct in saying that a Commission appointed to investigate found that over 50 per cent. of the noise was due to the changing of gears of gear-driven buses as compared with the nearly noiseless acceleration of petrol-electric vehicles. It was true that gear-driven buses had been greatly improved, but these vehicles were still noisy, and he thought he might safely state without fear of contradiction that experience showed that the life of a petrol-electric bus was considerably longer than that of a gear-driven vehicle and the cost of maintenance greatly less.



The bus supersedes the light railway. The depot of the Chemins de fer du Calvados at Bayeux, showing remnants of the lines and the railway stock in the shed on the right. The shed in the centre is now being used as a bus garage (see also article on page 19)

Road Motor Services of the South African Railways

A brief review of the development of road motor services to act as feeders to the railway and a note on the co-ordination of road and rail in the Dominion

By A. W. ARTHURTON, formerly Secretary, British Railways Press Bureau

THE first South African Railways road motor service from Bot River to Hermanus in Cape Province (20 miles) was inaugurated as long ago as December, 1912. Additional routes were opened up each year until 1925, when the demand for these facilities increased to such an extent that it was found necessary to form a separate department, with headquarters at Johannesburg, to control the various services. The mileage was then only 501, and in that year no fewer than 18 additional routes came into operation. Thereafter extensions continued, the mileage at December 31 last being 11,249, over 5,000 of which were in Cape Province.

The extent to which the services have met a material want is shown by the steadily increasing traffic carried.

The total number of road motor vehicles in service at the end of 1935 was 670, comprising 83 for the conveyance of passengers, 214 for both passengers and goods, 129 for goods traffic only, and 244 trailers. That the administration is fully alive to the necessity of exploring all avenues to maintain the high efficiency of the services is evidenced by the fact that two 10-ton capacity and two 5-ton capacity vehicles, equipped with compression ignition engines, were placed in commission last year.

Road motor vehicle mileage in 1934-35 totalled 5,245,956 as against 5,049,918 during the preceding twelve months; the revenue per vehicle mile was 22-1d. compared with 21-5d. the previous year and the expenditure 19-4d. as against 19-9d. Running costs, it is stated by the



One of the Leyland single deckers which are doing good service in South Africa where there is a sufficient passenger traffic to warrant the use of a vehicle of this type

South Africa is a country of vast distances, and the successful marketing of produce, particularly in districts remote from the rail, is dependent on cheap, reliable and regular transport. The facilities provided by the road motor services for the transport of heavy and seasonal traffic are becoming more popular and are being taken advantage of by farmers and other producers to a greater degree every year.

The introduction of vehicles of greater capacity furnished a stimulus to producers of wool, cotton, grain, and citrus and other fruits in outlying areas. Large consignments of wool, wheat and maize are now conveyed over the various routes, while the quantity of citrus fruit transported during 1934-35 approximated 20,000 tons. Trailer working, by means of which a net load of 15 to 20 tons per trip is possible, has been introduced in certain districts, where road conditions permit, for the transport of maize and wheat. Extensive use is also made of light 2-ton trailers, of which a large number has been placed in service. These light capacity trailers are very economical inasmuch as they admit of larger paying loads being hauled by vehicles operating scheduled trips.

General Manager, Mr. T. H. Watermeyer, in his last report, could be still further reduced were it not for the condition of most of the country roads over which the services are operated. Repeated representations have been made to the various provincial authorities but, owing to lack of funds, these bodies have been unable to improve matters to any appreciable extent. It is considered that feeder roads should be regarded as "special" roads, and that funds for their proper construction and maintenance should be provided by the recently created National Road Board.

During 1929, as a result of the expansion of the road motor services, it was found necessary, in the interests of economy and efficiency, to extend the administration's cartage workshops then in existence at the various depots, and to establish new shops at other centres for the construction of motor vehicle bodies, and for the repair and overhaul of road vehicles, both mechanical and animal drawn. Such additional repair shops are now operating at Johannesburg, Bloemfontein, Kimberley, Cape Town, East London, Durban, and Port Elizabeth, and the results have fully justified the measure. These workshops are



For some of its "mixed traffic" road services, the above type of vehicle for carrying both freight and passengers has been developed by the South African Railways and Harbours. The chassis is a Thornycroft

now functioning very satisfactorily, and research work carried out therein is assisting in reducing repair costs. At the Kazerne repair shops a modern engine test bed has been installed.

The operation of the Motor Carrier Transportation Act of 1930 has effected a great improvement from the point of view of the railways in regard to wasteful road transport competition in South Africa. There is still, however, extensive competition in certain areas unproclaimed under the Act, and notably in Namaqualand where goods are conveyed by sea to points along the coast and thence inland by motor vehicles. The competition of animal-drawn transport, particularly in petrol traffic, which was referred to in THE RAILWAY GAZETTE of February 14 last is still very keen and is a menace both to the railways

and the private motor carriers authorised under the Act of 1930. Nevertheless, the rapid transit afforded by the railways' road motor services as compared with animal transport, and the fact that the facilities have enabled producers to place their products on important markets in the minimum time, have rendered it practicable for sections of the farming community to increase production of perishable commodities such as cream, eggs and poultry, the relative output having risen enormously since the formation of the Administration's Road Motor Department. The establishment of the road motor services has also saved the money that would otherwise have had to be spent on constructing branch lines in sparsely populated areas.

In connection with the question of the co-ordinated control of public transport in South Africa, it is significant to find that the establishment of a Ministry of Transport is being urged, which would be responsible for the control of the South African Railways and

regulation of all road transport and air services within the Union, as well as sea transport serving Union ports. This has the support of the Railway Administration and various public bodies, commercial associations, public transport organisations, and societies interested in animal welfare. An Act has recently been passed (No. 42 of 1935) by the South African Parliament for the establishment of a National Road Board and a National Road Fund. The Act provides the Minister of the Interior with wide powers through a National Road Board for the proclamation, construction, maintenance, control, and financing of national roads, but not for the control of the traffic on, and the users of, these and other public roads.



Part of an order for 58 KARRIER COB Junior tractors placed by the South African Railways and Harbours through Rootes Limited. They will be employed on railhead services at various points on the Company's system. With the tractors 160 sets of trailer coupling gears are being supplied, the trailers themselves being built locally in South Africa

New Equipment for South African Road Services

DURING the past few months orders for considerable numbers of new vehicles have been placed by the administration of the South African Railways and Harbours. The bodywork, to suit local requirements, is built in the railway workshops, and one of our illustrations depicts the modern lines of a combination body produced for a new service in the North-West Cape area, between Klaver and Calvinia, a distance of 92 miles. The chassis is the six-cylinder 49-110 h.p. Albion, with coachwork designed by the administration's engineers at Johannesburg and built in the motor repair shops of the Cape Western System at Cape Town.

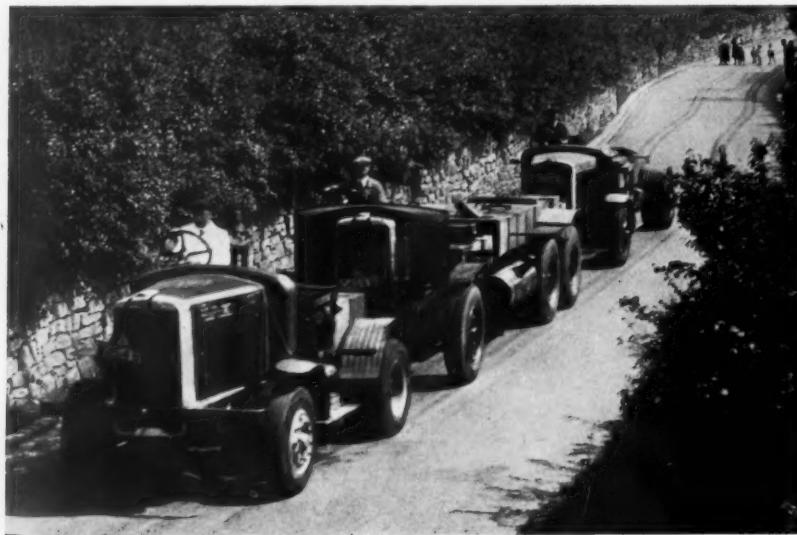
Accommodation is provided for 13 first class and 8 second class passengers, while there is also space for approximately 5,000 lb. of mails and parcels, and provision is made for hauling, if required, a two-wheeled trailer capable of carrying an extra 2,000 lb. of parcels and luggage. Drop windows are provided, and a special strip of green glass is built into the fixed portion of the windscreens to reduce the effects of glare. Preliminary tests made with the vehicle included tra-

of vehicles, the coachwork staff is now giving attention to the production of all-metal bodywork.

It was recorded in our issue of March 13 that an order had been placed by the Administration with Leyland Motors Limited for 17 specially-designed Beaver-Six tractors, with 9-ft. wheelbase and the first three have now been shipped. They have undergone some severe



A new type of composite coach built in the railway motor repair shops at Capetown. It is mounted on a six-cylinder 49-110 h.p. Albion chassis



A Beaver-Six tractor being tested for hill-climbing in the neighbourhood of the Leyland works, preparatory to shipment to South Africa for railway service. It is hauling a total load of 42 tons

versing the 92-mile run in three hours, which will enable the return journey to be made in one day. A year or two back eight hours were required for the journey, the return trip being made on the following day. With the new bus, mails despatched from Cape Town on Sundays, Tuesdays, and Thursdays will be delivered in Calvinia before 11 a.m. the following morning.

Owing to considerable trouble being experienced through the development of dry rot at the joints in wooden framing

tests and we illustrate one of them negotiating a steep hill near Leyland with a full load. A Hippo and a Beaver-Six were attached to the drawbar of the tractor, and each vehicle was loaded so that the total gross weight of the three chassis was 42 tons. In bottom gear, with the additional reduction provided by the auxiliary gearbox, the tractor drew this load comfortably up a gradient of one in $8\frac{1}{2}$.

Within the last week or so we have also recorded that the administration has placed a further order for 26 heavy-duty, rigid six-wheelers of the Leyland Hippo type. An interesting feature of this order is that the chassis are to be fitted with petrol engines. Seventy per cent. of the vehicles shipped by Leyland Motors Limited to South Africa during the period June, 1935—May, 1936, were diesel driven. While they follow the general design of the Hippos used at home, these particular vehicles have a number of special features. Engines of 11 litres capacity, with an R.A.C. rating of 57 h.p. and capable of developing 145 b.h.p. at 2,200 r.p.m., are to be used. The equipment includes 88-gall. dual petrol tanks with cleaning doors; 4-gall. Autovac; tropical radiator; and a drawbar of the War Office spring type, for hauling trailers. The chassis will weigh 15,600 lb. and have an overall length of 29 ft. 8 $\frac{1}{2}$ in.

A large order for Karrier Cob tractors has also been placed in recent months.

Passenger Road Transport in Normandy

A brief review of some outstanding impressions of the road services in the country districts in the North-west of France

(From a correspondent)

THE Département of Calvados in the middle of Normandy, an agricultural country populated by small-holders, provides a territory favourable for the successful operation of road passenger transport services. The absence of many townships of any size and the scattered nature of the population makes it difficult for the main-line railways to compete with the more adaptable road vehicle. Indeed, even the light railways have largely succumbed to competition, and at Bayeux, for instance, the deserted sidings and carriage sheds of the Chemins de fer du Calvados give witness to the fact.

From Caen, the most important town of the *département*, there are three principal concerns operating long distance services, namely, the Société Générale des Transports Départementaux, Les Courriers Normands, and the Société Anonyme Les Rapides de Normandie. Les Courriers Normands is closely associated with the Renault concern which supplies all its service vehicles, and the Société Générale receives a railway subsidy. All three companies operate single-deck buses, most of which are four-wheeled seating between 20 and 30 passengers.

On Sundays and Thursdays—the national holidays—many extra services are provided, and during the summer months provision is made for the heavy tourist traffic. Many of the services, although competing locally with the railways, connect with the main-line trains. Especially is this so, of course, in the case of the services of the Société Générale whose buses, for instance, run into the court yard of the fine new station at Caen, and in whose public timetables comprehensive details of these connections appear. In some parts the railways operate their own buses. For example, where a railway station, such as that at Avranches, is some little distance from the centre of the town, the railways provide their own *correspondance* services. Again, a number of the services are co-ordinated with those of other road transport concerns,

especially at the fringes of their respective operating territories.

What road transport legislation there may be in existence seems to impose few restrictions. Experience derived from journeys on Société Générale vehicles, indicates, however, that what limitations there are—official or unofficial—are often ignored. On a 50 mile journey from Caen to Villedieu it was noticeable that the only person smoking was the driver, sitting immediately beneath the legend "Defense de Fumer." Another restriction of which the driver appeared to be equally unaware was a speed limit of 55 k.p.h. By averaging well over this figure for long stretches at a time, he was enabled to make calls at several *estaminets*. Although the roads are frequently narrow and ill-suited to such hectic driving, they have the saving grace of being dead straight over very long distances.

The driver in every case fulfils also the function of conductor. Taken generally the methods of ticket issuing are laborious. The date, for instance, has to be rubber-stamped on every ticket. An improved system, however, has been introduced on some of the Rapides buses, and the driver is supplied with an issuing machine similar to that manufactured in this country by Clayton Dewandre. To save time passengers, travelling from terminal points where the company has its own offices, are required to obtain their tickets before entering the bus. At the present rate of exchange fares work out at approximately a penny a mile.

The seating arrangements are on the whole good and more or less uniform for the vehicles of all companies, two rows of double seats being placed in orthodox style down the length of the bus. Travelling is not always as comfortable as it might be, however, as the Frenchman seems to have an inherent fear of fresh air, and not only are all the windows invariably closed but the handles



Left: Société Générale des Transports Départementaux buses in the yard of the new Etat station at Caen. Right: The railway station at Avranches lies in a valley below the town and a "correspondance" bus service is therefore maintained by the Chemins de Fer Normands between a booking office in the centre of the town and the station. The "correspondance" is shown outside the town office



Left : The new garage of *Les Courriers Normands* at Caen ; light repairs can be carried out here. Right : Some *Rapides de Normandie* vehicles lined up at the Lisieux terminus

are also removed. Luggage is carried on the roof. In the principal towns, such as Caen, Lisieux, and Falaise, waiting room accommodation is provided, but in the country districts where stops are only conditional, the

driver announces his arrival by blaring his horn throughout his passage through the village, stopping, if required, at any point, a somewhat crude procedure, but one which seems to be generally tolerated.

The Cost to the French Railways of their Road Subsidiaries

THE report on the working of the French railway companies during the year 1934, recently transmitted to the Ministry for Public Works, includes a chapter relating to the road transport services organised by their subsidiaries. The appended table shows, for the years 1928 to 1934, the length of the services in operation, the number of vehicles used, the distance covered, the number of passengers carried, and the total traffic receipts, in the course of each year. It would appear from these figures that the companies passed through a severe crisis in 1933, and that they suspended the operation of about one-fourth of their services in an effort to reduce expenses. Notwithstanding an increasing volume of financial support from the parent companies, the road transport subsidiaries show a growing deficit year by year, as will be seen from the following table:—

Year	Railway subsidies to subsidiaries	Deficit on working	Companies showing profits		Fr.
			No.	Amount	
	Fr.	Fr.		Fr.	
1928	1,964,439	—	—	—	
1929	3,815,798	1,283,509	2	454,996	
1930	5,722,777	1,089,777	2	508,804	
1931	8,387,353	3,931,799	1	326,293	
1932	11,161,291	4,804,582	1	464,783	
1933	11,715,587	10,305,510	2	38,995	
1934	17,947,139	11,844,694	—	—	
	60,714,384	33,259,871	—	—	

Thus it will be seen that the road transport subsidiaries of the railway companies, far from helping the financial situation of their parent companies, are a source of substantial and increasing loss—amounting, for 1934, to either fr. 18 or 30 million (it is not clear from the manner in which the returns are drawn up whether the sums shown as deficits are embodied in, or are additional to, the amounts of the subsidies). The deficit in 1934 was seven times as large as in 1929, and the subsidies in 1934 nine times as large as in 1928. The total of the former amounts

to fr. 33½ million, and that of the latter to fr. 60·7 million, in addition to which there is a sum of fr. 37·8 million represented by the capital invested which, in the light of the above figures, does not appear likely to ever be recuperated.

ROAD TRANSPORT SUBSIDIARIES OF THE FRENCH RAILWAY COMPANIES : RESULTS OF WORKING, 1928 TO 1934

Year	Length of lines	Number of vehicles	Distance covered	Number of passengers carried	Total receipts
1928	km.	333	km.	776,800	Fr. 16,179,047
1929	39,428	615	8,266,734	2,599,865	26,119,695
1930	42,717	674	11,914,292	4,262,776	35,715,811
1931	52,022	600	13,390,045	6,601,200	39,052,789
1932	51,679	584	17,000,040	8,009,063	45,065,316
1933	51,297	437	16,226,644	8,302,420	45,708,678
1934	39,326	634	19,642,424	9,421,174	48,136,992

Bus and Coach Stations

In the annual report of Ribble Motor Services mention was made of the bus station which the concern is building at Morecambe and at the general meeting the Chairman pointed out that the company was interested in the Blackpool bus station that is being erected on the site of the Coliseum which is to be ready this summer. Harrogate is also to have an up-to-date bus station in Station Parade on ground which has been bought from the L.N.E.R. by the West Yorkshire Road Car Co. Ltd., an associated undertaking. This structure will be of red brick, in two storeys, with a canopy covering the waiting platforms and in addition to the offices, there will be spacious waiting rooms, booking hall, inquiry kiosks. Further office staff will be accommodated on the upper floor. Nine stands are being provided for buses, with room for the loading of additional vehicles during rush periods, although it is only intended to use the station for long distance services. The same undertaking proposes to draw up plans for a similar station in Leeds.

New Ideas in Coach Stations

An example of the new style coach stations that are being built in the United States for the convenience of passengers using the long-distance coach lines

IN the *Road Transport Section* for June 5, special reference was made to the formation in the United States of National Trailways for the purpose of co-ordinating the services of various long-distance and trans-Continental coach operating companies associated with railways. The organisation is now in being, and a start has been made with painting the vehicles in a standard livery so that they may be identified with the National Trailways scheme. A good deal of work has been involved in organising new through routes and in adjusting various questions in connection with rates and schedules. Among the most important matters now receiving attention is that of providing properly designed stations at various points; one of the first contracts placed is for a new joint station in St. Louis, Mo., which is to incorporate all modern facilities.

This policy had already been anticipated by the co-operative action of two companies that are now members of National Trailways, in opening a new station in the business centre of Little Rock, Ark. The view of this station that we reproduce, by courtesy of the *Railway Age*, reveals the modern style of the building and the five loading ramps leading from the main platform at the northern side of the station. The ramps are fitted with guard rails to secure more orderly loading, as well as for safety, while the super-suspension canopy, extending over platform and coaches, ensures comfortable loading in any weather.

With walls finished in harmonising shades of brick, and decorative tiled floors, the station has the appearance of a Spanish *patio*, and this effect is added to by a balcony with a rustic iron balustrade extending along the entire centre of the structure, with stairs on each side leading from the ground to the mezzanine floor. The waiting room is supplied with chromium framed chairs and lounges.

trimmed with green and black leather upholstery. There is a coloured waiting room, equipped in similar fashion, at the west end of the station; the ticket office, baggage room, and offices are on the ground floor. Rest rooms and the district supervisor's office are on the balcony floor. Mention should also be made of the loud-speaker installation which gives to friends awaiting passengers ample notice of arrival times.

It is expected that when the National Trailways scheme is in complete working order there will be an appreciable saving in the journey time between New York and California. By operating buses for through travellers which will avoid the congested Chicago traffic area and proceed from the east to Joliet and thence westward, it is expected that between eight and ten hours can be saved. Another matter that marks these modern services is the provision of dining facilities at points west of Wichita. On the Santa Fe Trail stages, these dining rooms are managed by the same concern that is in charge of the catering at the railway stations. In some places where facilities can be arranged the buses and coaches will use the railway station premises. That is intended to be the practice as far as possible not merely because of the railway association of most of the companies concerned but because the railway stations are often in very good positions.

National Trailways will serve a great many of the country's scenic attractions such as the Niagara Falls, the Finger Lake district of New York, the Ozark territory in Missouri and Arkansas, and the Indian territory of Arizona and New Mexico. There are also the national parks and forests in the Grand Canyon district of north-western Arizona and southwestern Utah and the scenic mountain areas of Colorado, including the Royal Gorge and the Tennessee Pass, and the Mesa Verde national park in southwestern Colorado.



The loading platform and ramps at the new National Trailways coach station at Little Rock, Ark. It is proposed to build a series of stations at the scheduled stopping places on the long distance routes across the United States

A.E.C.'s in Canadian Service



Two A.E.C. oil-engined Rangers have just been put into commission by the London Street Railway Company in Ontario. The bodies are Canadian-built, of wood and aluminium construction and designed to accommodate 25 passengers. The latest National Pneumatic rear exit step pads are fitted and the doors are equipped with a sensitive edge to avoid risk of injury to passengers by closing doors. This device reverses the door engine in an emergency and rings a bell on the driver's instrument board. All the seats embody leather-covered Dunlopillo cushions and rattan backs.

Modern Leylands in Ulster

One of the 20 Leyland Lion 36-seater buses for the Northern Ireland Road Transport Board. The bodies are fitted with Clayton heaters and have a sponge rubber mat running the full length of the gangway; Wypdri uncut moquette is used for upholstering the seats. To comply with local regulations each bus carries two hatchets complete with leather sheaths. An interesting feature of the buses is the method of mounting the luggage boot on the roof, this has been effected so that a constant current of air passes to the Ashanco type ventilator which is actually mounted under the boot. Fifteen double deck Titans are also on order.



Publications Received

The Motor Transport Year Book and Directory, 1935-6. London: Electrical Press Limited, 13-16, Fisher Street, London, W.C.1. 8½ in. x 5½ in. x 2½ in. 922 pp., 30s. —This, the twentieth annual issue, contains more pages than before, although it appears a little slimmer, for which those who are continually consulting it will be grateful. They will also be grateful for another change, namely, that the companies in the main part of the book are arranged alphabetically under the first letter of the main name instead of the first letter of the full title. The present volume also strikes out on a fresh line by including a section on commercial aviation with details of air transport and allied undertakings, and airports and aerodromes. This will assuredly be widely welcomed, and it serves to emphasise the determination of the publishers to increase the usefulness of the book. It is instructive to find that the number of motor transport undertakings continues to mount again and the total number dealt with—8,743—is only 42 behind the record total of 1932-33. During the year under review the number of companies has grown from 2,012 to 2,326, while the number of private firms has risen from 5,798 to 6,273, so that recent legislation would not seem to have had quite such a throttling effect as we were assured it would have. The survey of the year with its tables and data is always worth studying, while the other sections of the volume, with their financial and commercial information succinctly put, can be described quite accurately as indispensable.

From Brighton to Inverness, Vol. 2. Prescot, Lancs.: British Insulated Cables. 8½ in. x 5½ in. 100 pp.—Those who are privileged to receive a copy of this volume from the well-known makers of cables and other electrical apparatus will appreciate it. Actually, the book has nothing to do with either Brighton or Inverness, but it contains another series of 48 town maps similar to those which made up the first volume. They are remarkably clear and good, and the accompanying letterpress gives just sufficient information about the place, even Stratford-on-Avon having to be content with a page. Once again we would point out that it would be useful to know where the railway stations are.

THE EXIDE CONVENTION.—Harrogate provided an ideal setting for the annual Exide Convention from June 17 to 20. Business sessions occupied the mornings and among the recreations arranged for the afternoons were competitions for the Exide Challenge Cup and other golfing trophies, a motor coach tour to Harewood, the home of the Princess Royal, and to Ripon and Fountains Abbey where Dr. C. H. Moody, C.B.E., F.S.A., explained points of interest. Mr. D. P. Dunne, who presided over the Convention, in his opening address stressed the importance in good business organisation of keeping adequate records, particularly in regard to stock. He also referred to the School of Salesmanship organised by the company.

RAILWAY NEWS SECTION

PERSONAL

Mr. John Frederick Lean, O.B.E., who retired on June 30 from the position of Principal Assistant to the General Manager, Great Western Railway, after 50 years' service, was engaged in the General Manager's office throughout his career. After obtaining varied experience in different sections of it, he was given charge of the depart-

3, as having received the honour of O.B.E. Mr. Lean is a Fellow of the Chartered Institute of Secretaries, and an Officer of the Order of St. John of Jerusalem. He has always taken a keen interest in the various staff organisations, whether of an athletic or educational character, and given them valuable and consistent support. For the past seventeen years he was Chairman of the Great Western Rail-

tional steel engineers. In December, 1894, Mr. Cookson entered the service of the Great Western Railway as a surveyor and draughtsman on the staff of the new works section of the Chief Engineer's office, and in 1901 was appointed assistant. From October, 1901, to July, 1907, he was successively appointed Resident Engineer on the construction of new railways between Acton and Wycombe, between Clarbes-



Mr. J. F. Lean, O.B.E.,
Principal Assistant to the General Manager,
G.W.R., who has retired



Mr. A. C. Cookson, F.C.G.I.,
Stores Superintendent, Great Western Railway,
1927-36



Mr. G. F. Boxall,
Appointed Stores Superintendent,
G.W.R.

ment dealing with private siding agreements, light railways, joint railway matters, electrification schemes, &c. In 1919 he was appointed Chief Clerk to the General Manager, and two years later became Assistant to the General Manager. For the last seventeen years Mr. Lean has directed special attention to all staff matters affecting the G.W.R. He represented the General Manager on the sectional and railway councils and was a member of the Central and National Wages Boards set up under the Railways Act, 1921. He was also a member of the Railways Staff Conference, the National Railway Shopmen's Council, and Railway Police Conference. He was a member of the Special Joint Committee which drew up the new scheme of negotiating machinery which came into force in March, 1935, and under that scheme he has been a member of the Railway Staff National Council. There was general satisfaction when, on the occasion of the centenary of the Great Western Railway Company, he was included in the last New Year Honours list, as recorded in our issue of January

way Ambulance Centre, and he has taken a prominent part in the activities of the Social and Educational Union. He enters upon his retirement in good health, and we join his many friends in wishing him many years of leisured happiness.

Mr. A. C. Cookson, M.Inst.C.E., F.C.G.I., who, as announced in THE RAILWAY GAZETTE of May 29, has retired from the position of Stores Superintendent, Great Western Railway, after nearly 42 years' service, was educated at Rossall School, where he obtained the principal mathematical scholarship. He afterwards gained the Rossall School scholarship at the City and Guilds of London Central Technical College, now one of the constituent colleges of the Imperial College of Science and Technology, and in 1888 he gained the diploma of the college (A.C.G.I.), and subsequently was elected a Fellow. He acquired his early engineering training at the works of J. & G. Rennie, of Blackfriars, and in 1891 joined the firm of Joseph Westwood, of Millwall, bridge and construc-

ton Road and Letterston, and those known as the Swansea District Lines. Mr. Cookson was appointed Chief Assistant to the Divisional Engineer at Gloucester in January, 1911, and in July, 1916, he became Steelwork and General Assistant to the Chief Engineer. He relinquished the latter position in May, 1924, upon his appointment as Assistant Stores Superintendent, at Swindon and he became Stores Superintendent in May, 1927. During his period of service as Steelwork Assistant in 1920 when the Railway Engineers' Association formed a sub-committee of railway bridge engineers to revise the standard curve of loading of bridges, most of the final calculations for this curve were made in Mr. Cookson's office. Later he represented the G.W.R. on the Bridge Stress Committee under the Board of Scientific and Industrial Research, which appointed a committee to investigate the effect of fast moving loads on bridges. In 1933-34 he was Chairman of the Stores Superintendents' Committee of the R.C.H., was President of the Railway Assistant Engineers' Asso-

July 3, 1936

ciation for 1935, and is also a Member of the Institution of Civil Engineers. Mr. Cookson has for some years been a lecturer on "Railway Engineering" at University College, London. We wish him all good wishes for a happy retirement.



Mr. R. A. P. Setterfield,
Appointed Manager, Hotels, Refreshment Rooms and Restaurant Cars Department, G.W.R.

partment at Paddington and in July, 1906, became an Assistant to the Electrical Engineer at Paddington. During the war, Mr. Boxall served with the Royal Naval Division and Royal Engineers (Signals), and attained the rank of Captain. He returned to



Mr. J. Tyrrell,
Chief Cashier, Great Western Railway,
1932-36

Mr. G. J. Walker, who retired on June 30 from the position of Manager of the Hotels, Refreshment Rooms & Restaurant Cars Department, G.W.R., has held that position for the past 24 years. He joined the G.W.R. in May, 1903, after



Mr. G. H. C. Wiltshire,
Appointed Chief Cashier, Great Western Railway



Mr. H. Adams Clarke,
Appointed Staff Assistant to the General Manager,
G.W.R.



Mr. A. G. Walkden, J.P., M.P.,
General Secretary Railway Clerks' Association,
1906-36



Mr. William Stott,
Elected General Secretary of the
Railway Clerks' Association

Mr. G. F. Boxall, who, as announced in THE RAILWAY GAZETTE of May 29, has been appointed to succeed Mr. Cookson as Stores Superintendent, G.W.R., was educated at the Godolphin School, Hammersmith, and received his technical training at the Chelsea Polytechnic Institute and as a pupil at the G.W.R. Park Royal generating station. He entered the company's service in August, 1903, as a shift engineer in the Electrical De-

partment at Paddington and in 1924, upon the absorption of the Electrical Department by the Chief Mechanical Engineer's Department, was transferred to Swindon as an assistant in the electric section. That position he held until his appointment as Assistant Stores Superintendent in April, 1933, the post he has occupied until his promotion now as Superintendent in charge of the Stores Department.

having had some fifteen years' varied experience in the restaurant and catering trade; much of it in other countries. During the period of Mr. Walker's management of the department widespread developments have taken place. As the leases of many refreshment room tenants fell in, the rooms were taken over by the railway and reconditioned on a steadily rising standard until culminating in those recently provided at Paddington, Car-

diff, Newport and Bristol; the quick lunch and snack bar at Paddington, opened last year, being a notable modern example. After the arduous work of the war period, the G.W.R. steamer catering was added to Mr. Walker's responsibilities. Subsequently, additions to the principal hotels have been noteworthy. Mr. Walker has been a member of the Executive Council of the Hotels and Restaurants Association of Great Britain since its inception, and a member and honorary Governor of the Council of Cookery & Food Association. We add our good wishes for Mr. Walker's health and happiness in his retirement.

Mr. R. A. P. Setterfield, who, as announced in our issue of January 10, has been appointed to succeed Mr. Walker as Manager, Hotels, Refreshment Rooms and Restaurant Cars Department, G.W.R., has been in the service of the Cunard Steam Ship Company for the past 21 years. His experience in the hotel and catering business has been remarkably extensive and varied. His career began as an apprentice at the Grand Hotel, Tunbridge Wells, and in 1907 he obtained an appointment on the Great Eastern Railway as Assistant Superintendent at the Liverpool Street Hotel. During 1908 and 1909 he gained Continental experience as *Maitre d'hôtel* at the Hotel de Bayonne, Bordeaux. Successive appointments were as Superintendent, Abercorn Rooms, London; Assistant Manager, Midland Hotel, Birmingham; and Assistant Manager, Burleys Hotel, London. During the three years 1912 to 1915, Mr. Setterfield was Manager of the Exchange Station Hotel, Liverpool, and in this position was partly responsible for supervision of the Lancashire and Yorkshire Railway restaurant cars and refreshment rooms. In 1915 he began his service with the Cunard Steam Ship Company. For the first eight years he was Deputy Catering Superintendent, and for the remainder of the period Chief Superintending Caterer. Mr. Setterfield was largely responsible for the introduction of restaurant service in all liners instead of the former *table d'hôte* system of meals. This innovation, though entailing extensive alterations in kitchens and pantries, produced catering comparable with that of the best establishments ashore and without additional charge. His last responsibility in the Cunard White Star service was the preparation and supervision of the "hotel" arrangements on the *Queen Mary*. He was on board the great liner for the maiden voyage and began his duties on the G.W.R. on the vessel's return.

Mr. James Tyrrell, who, as announced in THE RAILWAY GAZETTE of May 29, has retired from the position of Chief Cashier, G.W.R., has had 45½ years' service with that railway. He began his career in the Cash Department at Paddington in December,

1890, and remained there until 1918, when he was appointed District Cashier at Worcester. Three years later he returned to Paddington as Chief Clerk to the Chief Cashier, and in July, 1927, was appointed Assistant to the Chief Cashier. He was promoted to be Chief Cashier in January, 1932. Apart from Mr. Tyrrell's official service, he has rendered valued assistance in the capacity of honorary treasurer to the various staff societies at headquarters. A work particularly near to his heart has been his chairmanship of the "Helping Hand" Fund committee. His chief relaxation is as a keen bowls player, and he carries with him into retirement our good wishes.

Mr. George Wiltshire, who, as recorded in our issue of May 29, has been appointed to succeed Mr. Tyrrell as Chief Cashier, Great Western Railway, had been Chief Clerk to the Chief Cashier since January, 1932. He joined the service of the Taff Vale Railway in the Goods Manager's office, where he remained for ten years, prior to being transferred to the Secretary's office in 1903. In 1914 he became Assistant Cashier of the Taff Vale Railway. Following the railway amalgamations in 1922, he was appointed District Cashier at Cardiff, G.W.R., a position he held until his promotion to Paddington, as Chief Clerk to the Chief Cashier. Like his predecessor, Mr. Wiltshire is a bowls enthusiast and is bowls captain of the G.W.R. (London) Athletic Association.

Mr. Hervey Adams Clarke has been appointed Staff Assistant to the General Manager of the Great Western Railway. He was educated at The Abbey, Tipperary, and at Woodbridge School, and began his service on the G.W.R. in the Audit Office at Paddington in August, 1907, and in 1909 was transferred to the Chief Engineer's office. There he was employed for five years, until, in 1914 he was posted to the Divisional Superintendent's office at Paddington. In 1917 he was promoted to the staff section of the General Manager's office, of which section he became head in 1921. Mr. Adams Clarke was secretary to the company's side of the Sectional Councils and Railway Council set up under the provisions of the Railways Act, 1921, and acted in that capacity until 1929, since when he has been the General Manager's representative on the Sectional Councils and other negotiating bodies dealing with the companies' staff. He is a member of the Railways Staff Conference Committee, the Railway Staff National Council, and a member of the Executive Committee and Council of the British Association for Commercial and Industrial Education. He is also Chairman of the Divisional Ambulance Secretaries' Conference.

Mr. A. G. Walkden, J.P., M.P., who, as recorded on page 1050 of our issue

of May 29, is retiring from the position of General Secretary to the Railway Clerks' Association, relinquished charge of his duties on June 30. Mr. Walkden entered the service of the old Great Northern Railway as a junior clerk at Thackley in July, 1889, and in April, 1890, was transferred to Meldreth, as general clerk. In 1892, he went to Leicester, where for two years he served in all sections of the Passenger Department, and was then transferred to the Goods Department as Agent's personal clerk, also assisting on relief work in the various sections of the department. Four years later he was promoted to be principal claims clerk in the District Goods Manager's office at Nottingham, and three years later was appointed Goods Traffic Canvasser for Nottingham and district. In March, 1905, at the age of 32, he was appointed Goods Agent at Fletton, near Peterborough, a position he left in June the following year to become General Secretary of the Railway Clerks' Association. Mr. Walkden is a foundation member of the association, and was instrumental in securing its inauguration in 1897, when he was in the G.N.R. District Manager's office at Nottingham. When he left the railway the association had only about 4,000 members and was in deep waters financially. Today it has a membership of more than 60,000 and funds amounting to nearly £400,000. Mr. Walkden has given extensive evidence on behalf of his union before various Royal commissions and Government committees of inquiry. He has also been a member of the British Trades Union Congress General Council since 1921, and was President of that body during the year 1932-33. For a number of years he also served as a member of the Executive Committee of the International Transportworkers' Federation. He is a member of the Industrial Court for dealing with cases relating to service conditions submitted by staff in the Civil Service; and has served as a member of the London and Home Counties Traffic Advisory Committee since that body was instituted under the London Passenger Transport Act, 1933. Mr. Walkden sat as Member of Parliament for Bristol South from 1929-1931, and was again elected for the same constituency at the last Election. He is a Justice of the Peace for the County of London, and is a member of the League of Nations Union Executive Committee. Mr. Walkden comes of a railway family, his father having served for many years on the old Great Northern at King's Cross. The wide experience he gained during his railway service has been of great assistance in his work as a railway trade union secretary.

Mr. William Stott, whose election was reported on page 1050 of our issue of May 29, has now succeeded Mr. Walkden, as from July 1, as General Secretary of the Railway Clerks' Association. He joined the former North

Eastern Railway as a goods clerk at Boroughbridge in 1894, and he worked for two periods in the District Goods Manager's office at York, and at several goods stations until March, 1909, when he was appointed Assistant Secretary of the R.C.A. From 1909 until 1924 his varied duties included the sub-editorship and, for about a dozen years, the editorship of the *Railway Service Journal*. On the formation of sectional councils for the salaried grades, Mr. Stott became Secretary of the employees' side of the London & South Western Council and of the Somerset & Dorset Council. Early in 1924 he gave up those and other duties and took over the secretaryship of the employees' side of L.N.E.R. Sectional Council No. 1, but he now relinquishes that position. Mr. Stott has also been in charge of the Movements Department in the R.C.A. head office since 1924, and in that capacity he has represented the R.C.A. at discussions with the Railways Staff Conference and at meetings of the Central Wages Board, and also has assisted in preparing the R.C.A. cases for the National Wages Board.

Mr. C. H. Newton, Divisional General Manager, Southern Area, L.N.E.R., has been appointed a Director of the Eastern Counties Omnibus Co. Ltd., in place of Mr. G. F. Thurston.

At the general meeting of the Great Western of Brazil Railway, on June 24, the Chairman announced that, owing to the resignation of Dr. Odor Dias da Costa, the board had promoted Mr. R. H. Dobson, Assistant Traffic Manager, to succeed him as Traffic Manager, as from June 1.

On the occasion of the tenth anniversary, on June 4, 1936, of his becoming General Manager of the German State Railway, Dr. Julius Dorpmüller received from Herr Hitler a portrait and congratulatory letter, thanking him for what he has done to develop and improve the organisation of the Reichsbahn. The Transport Minister, Freiherr von Eltz-Rübenach, also sent Dr. Dorpmüller a letter of greeting. The National Railways' Association and Railway Orphanage presented him with illuminated addresses.

We regret to record the death, on June 25, of Professor W. E. Dalby, F.R.S., Emeritus Professor of Engineering, University of London, at the age of 72. One of the greatest authorities on the theory of mechanical, and especially locomotive engineering, Professor Dalby is well known to many thousands of students who have passed through the City & Guilds of London, Central Technical College, South Kensington, later a constituent of the Royal College of Science & Technology, as Professor of Mechanical Engineering and Applied Mechanics.

He was also Dean of the College. An editorial note on his career will be found on page 1.

The directors of the London Midland and Scottish Railway Company at their meeting last week appointed Viscount Clanfield as a Director of the company. Viscount Clanfield is a working Director of James Williamson & Son Ltd., Lancaster; President of the Lancaster & District Chamber of Commerce; and a Director of the Sea Insurance Co., Ltd., Liverpool.

Messrs. E. F. Wilkinson and T. H. Royle, whose retirement from the North Eastern Area, L.N.E.R., was recorded in our issue of June 12, were, on June 30, entertained to luncheon at the Royal Station Hotel, York, and to mark the occasion of their retirement Mr. T. Hornsby, the Divisional General Manager, presented to Mr. Wilkinson a gold pocket watch and albert, and to Mr. Royle, a Cold Spot refrigerator, on behalf of brother officers in the North Eastern Area.

We regret to record the death, on July 1, of Mr. Kenneth Alfred Wolfe Barry, O.B.E., M.Inst.C.E., second son of the late Sir John Wolfe Barry, and senior partner in the well-known firm of consulting engineers bearing his name. He was born in 1879, educated at Winchester and Trinity College, Cambridge, and after apprenticeship and training joined his father's firm as junior partner. He was a Member of Council of the

Institution of Civil Engineers, and was concerned largely with railway and docks works, notably the Bengal-Nagpur and its Vizagapatam harbour works, and the New Fish Docks at Grimsby. During the war, he held a commission in the Royal Artillery, and was Assistant Superintendent of H.M. Munitions Factory at Gretna, for which work he was honoured with the O.B.E.

L.N.E.R. APPOINTMENTS

The London & North Eastern Railway announces the following appointments:

Mr. E. Coleby, an Assistant Solicitor Chief Legal Adviser's Department, to be Assistant Solicitor (Conveyancing).

Mr. H. S. Owen, District Goods and Passenger Manager, Peterborough, to be District Goods Manager, Manchester, in succession to Mr. J. Showers, who will retire from the service on reaching the age limit in September next.

Mr. F. Hardy, Assistant District Superintendent, Sunderland, to be Assistant District Superintendent, Newcastle, in succession to Mr. E. W. I. Arkle, recently appointed District Passenger Manager, Newcastle.

Mr. A. J. Johnson, Chief Clerk, District Superintendent's office, Newcastle, to succeed Mr. Hardy as Assistant District Superintendent, Sunderland.

Mr. A. Roberts, Dock Superintendent, Tyne Dock, to be Assistant District Superintendent, York, in succession to Mr. J. R. Sadler, recently appointed Assistant to Superintendent (Trains), North Eastern Area.

East Indian Railway Dinner

The 38th East Indian Railway Officers' Annual Dinner was held at the Trocadero Restaurant on Friday last, June 26, Mr. H. G. Emmerson taking the chair. Those present were:

Messrs. A. S. Bailey, O.B.E.; W. Baker; G. F. Barnett; R. Bliss; F. S. Bond; W. H. Burnand; A. C. Carr; and W. C. Cartland; Capt. C. Clarke, V.D., and Col. C. J. Clarke, R.E.; Messrs. H. A. Collett and H. A. Collett, Jr.; Sir George Colvin, C.B., C.M.G., D.S.O.; Messrs. W. H. Denby; J. T. Derry; D. G. Dickins; L. A. Dickins; R. Dorman and S. T. Dutton; Sir James Duncan Elliot, K.B.E.; Messrs. H. G. Emmerson; C. Evers; H. J. Fereday; W. I. Ferrar; A. W. Goldsack; S. T. Gresham; A. R. Gundry; P. Hackforth; H. W. C. Halpin; E. J. Harris and J. Hequet; Sir Clement D. M. Hindley, K.C.I.E., V.D., and Dr. B. W. Holmes; Mr. H. Howe; Lt.-Col. G. Huddleston, C.I.E., V.D.; Messrs. G. R. G. Huddleston; H. B. Huddleston, O.B.E.; Capt. W. B. Huddleston, C.M.G.; Messrs. E. E. Joy and J. A. Kay; Lt.-Col. K. S. Laurie, V.D.; Maj.-Gen. G. G. Loch, C.B.; Messrs. R. Mair; F. G. S. Martin; R. E. L. Maunsell, C.B.E.; J. E. Monk; E. Moreau, C.B.E.; E. G. Moyes; P. G. Murray; G. Ormerod; C. W. Parsons; R. G. Peckitt, C.B.E.; W. E. Pincombe; F. A. Pope and B. V. Radley; Col. A. W. Rendell, V.D.; and Messrs. F. E. Robertson; J. Robertson; M. Robertson; C. F. Satow; B. Severs; F. A. Sherriff; W. J. Tomes; G. A. R. Trimming; and J. Tritton; Sir Seymour B. Tritton, K.B.E.; Messrs. A. V. Venables, M.C.; H. C. Wallace; R. J. L. Whithy; W. L. W. Whithy; T. A. White and A. Williams; Sir Charles Stuart-Williams; Messrs. Owen R. Williams; C. H. Windle; C. G. Young, and H. Yule.

After proposing the Loyal Toasts, the Chairman, before proceeding to

propose the toast of the evening, "The East Indian Railway," referred briefly to those E.I.R. officers who had died since the last dinner: Messrs. T. Foster, G. Harris, H. M. Hewett and Major General Sir Philip A. M. Nash, K.C.M.G., C.B. He then spoke for a few minutes upon a variety of interesting subjects, concluding by asking all present to join him in drinking to "The East Indian Railway."

Mr. Emmerson subsequently proposed the toast "The Guests," coupled with the name of Major General G. G. Loch, C.B., who, after recounting several amusing anecdotes of the good old days, thanked the Chairman and officers present on behalf of his fellow guests and himself for the toast so cordially drunk.

Colonel A. W. Rendell, V.D., then rose to ask everyone to join him in thanking the Honorary Secretary, Mr. S. T. Dutton, for the work he had done for years and was still doing so excellently in the running of the dinner; Col. Rendell concluded by proposing the toast: "Very good health to Sammy Dutton." Mr. Dutton suitably replied.

Finally the Chairman proposed Mr. F. E. Robertson as the Chairman of next year's dinner; Mr. Robertson replied by expressing his thanks for the honour done him.

Railway Staff and Labour Matters

The realm of railway staff and labour matters this week loses a rich personality by reason of the retirement of Mr. John Frederick Lean, O.B.E. For nearly fifty years he has been attached to the General Manager's office of the G.W.R. at Paddington and, during recent years, his position has been that of Principal Assistant to the General Manager, in which capacity he has been responsible to the General Manager for staff and labour matters and he has represented the G.W.R. on the Railways Staff Conference, on the former Central Wages Board, on the Railway Staff National Council which replaced that board, on the National Railway Shopmen's Council, on the National Railway Electrical Council, and on similar bodies covering other sections of staff.

In 1927 Mr. Lean appeared before the former Railway National Wages Board as advocate for all the companies, and later he became a member of that board. He was a member of the Special Joint Committee responsible for drawing up the new scheme of machinery of negotiation for railway staff which came into operation in March, 1935. Mr. Lean will be remembered in staff circles as a forceful and experienced negotiator, who won the respect of both sides of the table by his frankness of manner and his sage counsel. All who have been privileged to know him will wish him a happy retirement.

On Monday last, June 29, the National Railway Shopmen's Council, which consists of representatives of the railway companies, together with representatives of the National Union of Railwaymen and a large number of craft unions, settled the question of the railway shopmen's wages for at least twelve months. The employees' side of the council had submitted an application for the termination of the deduction of 2½ per cent. from the earnings of all railway employees under shop conditions (other than those engaged on the Great Central Section of the L.N.E.R. or the Cheshire Lines).

The settlement reached by the council provides that, as from the beginning of July, the deduction shall be only 1½ per cent. Over a hundred thousand employees will benefit by the new arrangement which was officially announced in the following terms:—

"The National Railway Shopmen's Council agreed today that as from the first full pay following July 1, 1936, the present deduction of 2½ per cent. from the gross earnings of all railway employees under shop conditions (other than those engaged in the Great Central Section of the L.N.E.R. or on the Cheshire Lines) should be replaced by a deduction of 1½ per cent. The deduction shall not operate so as to reduce the earnings of any adult male employee below 40s. a week. These arrangements will apply until the first full pay following July 1, 1937, and thereafter until varied by agreement or award."

Although the wages and conditions of the great majority of railway shop staff are covered by Industrial Court Decision No. 728 and are dealt with by the National Railway Shopmen's Council, there are certain groups, notably on the Great Central Section of the L.N.E.R., whose rates and conditions follow the practice of the general engineering trade. Such staff will benefit from a settlement which has just been reached between the Engineering and Allied Employers' National Federation and the Engineering Joint Trades Movement. This provides for the war bonus, payable to all adult male workers, to be increased by 3s. a week. The increase will take effect in three stages: 1s. a week will apply from the first full pay day in the week beginning June 29; 1s. at the end of September; and 1s. at the end of December. Certain minor alterations in conditions of service have also been agreed.

The Railway Police Central Conference reached an agreement on Monday, June 29, concerning the wages of police staff employed by the four main-line railway companies. The settlement which was on similar lines to

that reached by the Shopmen's Council was announced as under:—

"The Railway Police Central Conference agreed today that as from the first full pay following July 1, 1936, the present deduction of 2½ per cent. from all earnings of railway police should be replaced by a deduction of 1½ per cent. These arrangements to apply until the first full pay following July 1, 1937, and thereafter until varied by agreement or award."

On Tuesday, June 30, the Railway Staff National Council met in London and considered the claims of the National Union of Railwaymen and the Railway Clerks' Association for the termination of the percentage deductions from earnings at present operating under the agreement of August 10, 1934; also a claim by the National Union of Railwaymen for the restoration of the standard rates of payment for overtime, night duty, and Sunday duty, which were in operation prior to the issue of National Wages Board Decision No. 119 (March 5, 1931). No agreement was reached by the council, and the two trade unions will now refer their claims to the Railway Staff National Tribunal.

On Wednesday it was officially announced that the Minister of Labour had appointed Sir Arthur Salter to be Chairman of the Tribunal.

QUESTIONS IN PARLIAMENT

The Channel Tunnel

Mr. Day on June 25 asked the Prime Minister whether, in view of the recent development of aircraft, he would consider the appointment of a committee further to examine and investigate the technical, engineering, and economic problems involved in building a Channel tunnel at the present time; and could he make a statement as to His Majesty's Government's position regarding the same.

Mr. Baldwin.—The answer to the first part of the question is in the negative. There is no change in the attitude of His Majesty's Government.

Penarth Dock

Captain Arthur Evans asked the Minister of Transport if the Government agreed to the Great Western Railway temporarily closing the Penarth Dock; and, if so, under what condition was the request granted.

Captain A. Hudson (Parliamentary Secretary).—No Government permission is required for the temporary closing of Penarth Dock: the second part of the question does not therefore arise.

Special Buses in London

Sir William Davison asked the Secretary of State for the Home Department whether it was the intention of the Commissioner of Police to approve the proposal by the London Passenger Transport Board for a special fleet of buses, between main-line railway stations; and whether, before any approval was given to this proposal,

which would involve further serious traffic congestion in the streets of the Metropolis, consideration would be given to the fact that these stations were already connected by existing bus services as well as by other public vehicles.

Mr. Hore-Belisha (Minister of Transport) replied.—The matter is one for the Metropolitan Traffic Commissioner who is bound to have regard, *inter alia*, to the considerations mentioned by my hon. friend.

Parliamentary Notes

Progress of Railway Bills

The G.W.R. (Ealing and Shepherd's Bush Railway Extension) Bill was on June 25 reported with amendments from the Unopposed Committee of the House of Lords. The G.W.R. (Additional Powers) Bill is to be considered by the Select Committee of the House of Lords which is dealing with the Wolverhampton Corporation Bill. A Select Committee of the House of Lords, of which Lord O'Hagan is Chairman, will sit on Monday, July 6, at noon, to consider the London Passenger Transport Board Bill and the L.N.E.R. (London Transport) Bill. The Lords' Amendments to the L.M.S.R. Bill have been agreed to by the Commons, and the measure now awaits the Royal Assent. The Southern Railway Bill was approved on Wednesday (July 1) by the Unopposed Committee of the House of Lords.

MINISTRY OF TRANSPORT ACCIDENT REPORT

**Ken Viaduct, L.M.S.R. : December
31, 1935**

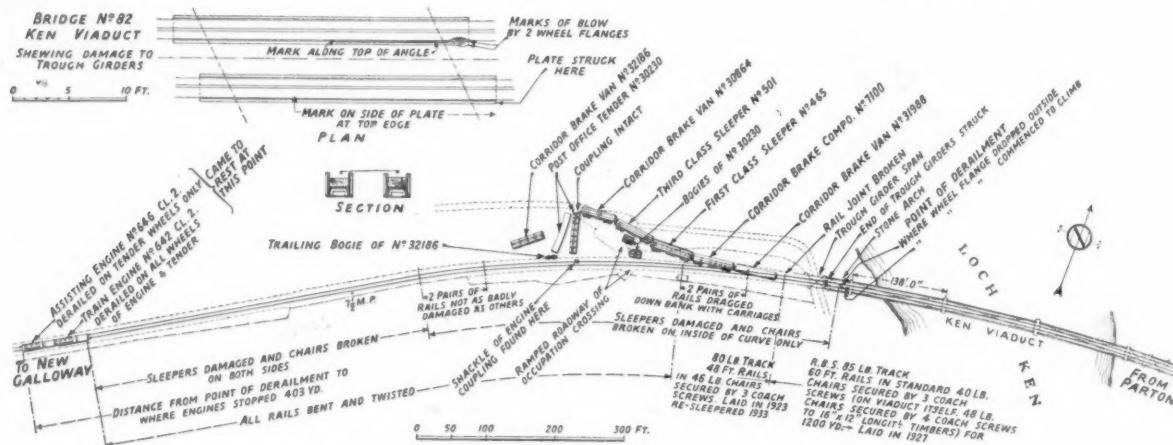
The 3.13 a.m. double-headed passenger train Carlisle to Stranraer was almost completely derailed after crossing Ken Viaduct: the results are shown on the accompanying diagram, taken from Colonel A. C. Trench's report. The two Post Office sorters in the second vehicle escaped without serious injury; of about 58 passengers only two were slightly injured. The train consisted of seven coaches, weighing 215 tons, vacuum brake on all except the centre wheels of the six-wheeled bogies, with 73 per cent.

between pier centres. The upper portion of the pier at the west end of the main spans, adjacent to the point of derailment, showed signs of cracking and was rebuilt three years ago: there are now no signs of weakness in the three piers at that end. Ballast over the crown of the arches is 2 ft. 9 in. deep.

Static deflection of the main spans with two similar Class 2 engines measured 0.93 in.; with two engines and a train running at 36 m.p.h. it was 1 in. It appears that the natural period of oscillation of the bridge when laden was about 3 per second or about the same as the revolutions per second of

were detached by being dragged across the ramped roadway (see plan)

There was evidence of a wheel flange beginning to climb the inner rail of the curve and traversing the head until it dropped outside, 11 ft. 8 in. further on. Some 20 ft. beyond, the rails were in trough girders (see plan) and there were marks of two flanges having mounted the end of the right hand one and travelled on the top for about 14 ft. until they dropped inside, with corresponding marks made by wheel faces on the inner surface of the left hand girder, which evidently acted successfully as a restraining wheel guard. The last of the 60-ft. rails was slightly bent, and the next two 48-ft. rails were pulled to the right and chairs and sleepers broken up to where the



Sketch of the scene of the derailment, showing disposition of the vehicles

brake power. Pilot engine No. 646 and train engine No. 642 were of the 4-4-0, Class 2, type, with steam brake controlled by vacuum. The night was very dark, with some showers of rain earlier and patches of low mist, but no fog. There had been no abnormal weather since a hard frost followed by thaw a week earlier.

The line runs in a westerly direction and is single from Castle Douglas, controlled by tablet apparatus. It approaches the viaduct on a left-handed curve of 28 ch., crosses it with one of 42 ch., and leaves it on another of 28 ch. The gradient is 1 in 400 for 572 yd. in rear of the approach curve, level for 506 yd. over the viaduct, then rises at 1 in 96 for 594 yd. There is no engine weight restriction, with the exception of the "Princess Royal" and "Royal Scot" classes. Many trains run double-headed.

Ken Viaduct was built in 1861 and has 3 main spans of 138 ft., and 2 short ones at each end. The former are bowspring wrought iron lattice girders with central overhead cross-bracing, on stone piers. The adjacent short spans are skew stone arches, 35 ft. between pier centres and those at the ends of the viaduct are carried in trough girders, on skew, 26 ft.

these engines at 45 m.p.h. One was run over the bridge at 43 m.p.h. for Colonel Trench, who observed a very distinct lateral sway of the whole span, continuing for two or three substantial oscillations after it had passed, and died away rapidly. With an ordinary train the coaches had a damping effect which, with a maximum speed of 25 m.p.h. caused a sway of $\frac{1}{2}$ in. only, towards the outside of the curve throughout the passage of the train, appreciably less than that noticed with the engine.

Particulars of the permanent way are given on the diagram. It was first tested with a Hallade recorder in 1929, when marking pegs were inserted, and has since been tested annually. In September, 1935, a substantial improvement over 1929 conditions was recorded. Superelevation is for 50 m.p.h., and the speed restriction is 45 m.p.h. The cant measured $3\frac{1}{2}$ in. over the main spans, rising to 5 in. on the embankment, the increase at the western end was at 1 in. in 85 ft. Cant and change of cant were uniform and the track in good condition up to the point of derailment. About 80 yd. from the western end of the viaduct is an occupation crossing, and no doubt the bogies of the postal van

engines stopped, the next two being dragged down the bank. Thereafter all rails were bent and twisted, and beyond a pair 180 yd. from the point of derailment there were marks of derailment on both sides of the rails.

The locomotives concerned have 6-ft. 9-in. driving wheels. The hammer blow on each driving axle at 45 m.p.h. is 1.17 tons and for the whole engine 2.08 tons. The pilot engine had been in the shops in June, and the train engine in November, 1935, when engine and tender wheels had been turned up and weights on them checked. The pilot engine had certain wheel springs changed in October and December. After the accident considerable discrepancies in tender wheel weights were noted, but some or all may have resulted from it.

Driver Galloway was on the pilot, and Driver Kirk on the train engine. The latter was working the brake, contrary to regulation, by arrangement with the former. Kirk estimated the speed at 25 to 30 m.p.h. just before the viaduct, on reaching the far end of which he felt a bump, and almost immediately another, the engine and tender swaying so that he had to hold on. He did not think they left the road at the first bump. This evidence

was supported generally by the other trainmen. Kirk's practice was to reduce speed well below the 45 m.p.h. limit, as they always felt a slight bump leaving the western end of the bridge. The guards said the running was normal up to the brake applications approaching the viaduct. Attendant Holder noticed a sharp brake application "as if a signal had been thrown up in the driver's face." He might not have noticed the normal applications, being occupied with his duties. Neither of the postal sorters noticed anything unusual until the jolt took place, nor could they estimate the speed, but they would not say it was excessive. Prompt steps were taken to obtain medical and other assistance.

Permanent Way Inspector Sutherland knew of no difficulty in keeping the track in good condition. A driver had, he learned, complained of a lurch at the Stranraer end of the bridge but he had been unable to find a defect and the driver later reported it all right. He rode this area on the footplate once a month, but had not passed this point at more than 35 to 40 m.p.h. Ganger Johnston had examined the track the day but one before and found it in order. Little maintenance was required. He had heard of a complaint about a lurch 9 to 12 months before but found no defect. He had no further complaints. Driver Mitchell, of the preceding express, an hour earlier, did not notice anything wrong when he passed at 20 to 30 m.p.h. He thought there had been a distinct improvement in the track since the Hallade recording had been applied.

Inspecting Officer's Conclusions

The initial difficulty was to identify the wheel or wheels responsible for the first mark of derailment. It seems certain that two axles were derailed to the left—and unlikely that more than two were—before reaching the trough girders. The right hand derailed wheels must have struck the girder end with so much force that one would expect the damage to be apparent on them, but the only damage was on the right centre and trailing wheels of the pilot engine tender, and the right driving wheel of the train engine. The coach wheels showed no serious damage, except those of the leading bogie of the third coach, but for good reasons the possibility that it initiated the derailment may be dismissed.

The pilot engine tender, once derailed, might have led to the derailment of the engine behind, or the engine derailed might have pulled that tender off. Driver Kirk was certain that there was an interval of perhaps two or three engine lengths between the normal bump felt in coming off the bridge and the second. It is very unlikely he could have failed to notice immediately the derailment and the violent blow when the wheel struck the girder. Driver Galloway was

equally emphatic that the pilot tender became derailed just before the engines stopped, but his evidence contained some inherent improbabilities. Colonel Trench thinks it most probable that the centre and trailing wheels of the pilot tender became derailed first, and the train engine and tender later.

Colonel Trench considered the possibility that some portion of the sanding gear of the train engine, missing after the accident, may have fallen and caused the derailment, but this would mean that it was initiated by the driving wheels of that engine, which is so unlikely that it may be dismissed. The track was in good order: the latest Hallade (1935) record showed no serious irregularities, but did indicate a single momentary transfer of loading from inner to outer rail at the point of derailment, compared with the 1929 record, which showed a number. Travelling over the bridge with similar engines, Colonel Trench noticed a distinct lurch, but hardly a bump such as the drivers spoke of. No defects of wheels or running gear were apparent, though there were inequalities between wheel weights, and it is possible that the hammer blows of the engines synchronised, increasing the vertical bridge oscillations. The speed must have been higher than estimated by Kirk and may have been 45 m.p.h. There may well have been a serious lack of unison in the control of the

two engines, a snatch accentuating any tendency to derailment that might exist.

Colonel Trench concludes that the derailment must have been due to a combination of some or all of the following circumstances:—

(a) The change in curvature, in super-elevation, and in rigidity of support of the permanent way adjacent to the point of derailment.

(b) The vertical oscillations which are likely to have arisen when traversing the main spans of the bridge, with the two engines possibly running in phase and probably at a speed approaching the natural frequency of the bridge; also some lateral oscillation of the bridge.

(c) Inequality of weight distribution on the tender wheels of the pilot engine; and possibly (d) some lack of unison in the control of the two engines, leading to a sudden snatch by the pilot engine on to a train which was still being heavily checked by the brake.

In view of the evidence and the circumstances, Colonel Trench suggests that the company should consider the imposition of a speed restriction somewhat lower than 45 m.p.h. It has already been decided to provide some additional sway bracing on the girder spans of the viaduct, and this is certainly desirable. Further tests should then be made to measure both lateral and vertical oscillations and to ascertain the stresses imposed on the important members of the structure, under conditions which are at least as severe as the worst which are likely to arise in normal working.

Revised B.S. Specification for Flat-Bottomed Rails

A revision of the British Standard Specification for Flat Bottom Railway Rails, bringing it into line with the corresponding specification for bull head rails, was published in May of this year, and bears the reference number B.S.S. 11/1936. The principal change is the introduction of a medium manganese rail composition, and the abandonment of the previous lower carbon composition, leaving two specified analyses only, one for carbon rails and the other for medium manganese rails. In the former quality the composition analysis limits remain generally as before, with the exception that, instead of specifying a maximum of 0.80 per cent. manganese (0.90 per cent. in the acid Bessemer process), a minimum of 0.70 and a maximum of 0.90 per cent. are now specified uniformly for acid and basic steel. Also, in the acid Bessemer process, the maximum limit of phosphorus is reduced from 0.07 to 0.06 per cent. In view, no doubt, of the more rapid cooling after rolling of the smaller rail sections, provision is made that, in the case of rails of 50 lb. per yd. and under, the carbon content shall be reduced by 0.05 per cent., bringing it down to 0.45 to 0.55 per cent. in the acid open hearth process, 0.50 to 0.63 per cent. in the basic open hearth process, and 0.40 to 0.50 per cent. in the acid Bessemer process. In the alternative medium manganese composition, the manganese content is

uniformly fixed at between 0.90 minimum and 1.20 per cent. maximum, as with bull head rails; the carbon is the same as that just quoted for the lighter carbon rails, with the proviso that in the basic open hearth process it shall not exceed 0.60 per cent., and that a further reduction of 0.05 per cent. in the limits shall be made in the case of rails of 50 lb. per yd. and under. In the basic Bessemer process this brings the lower limit of carbon with light rails down to 0.35 per cent. Silicon remains as before at 0.10 to 0.30 per cent. in both carbon and medium manganese qualities, and sulphur and phosphorus at a maximum of 0.06 per cent. in all processes except the basic open hearth, in which phosphorus is limited to 0.05 per cent. In the tests the only alterations are that no upper limit is placed to the breaking strength of the steel in the case of the medium manganese rails, also in conformity with the revised bull-head rail specification; the minimum elongation with medium manganese steel, however, if the breaking strength exceeds 50 tons per sq. in., has been lowered from 10 to 9 per cent. The pendulum impact test on a 1 in. section of rail, introduced in January, 1932, as a supplement to this specification, providing a safeguard against rolling weaknesses in the base of the web, is now incorporated as an optional test in the body of the specification.

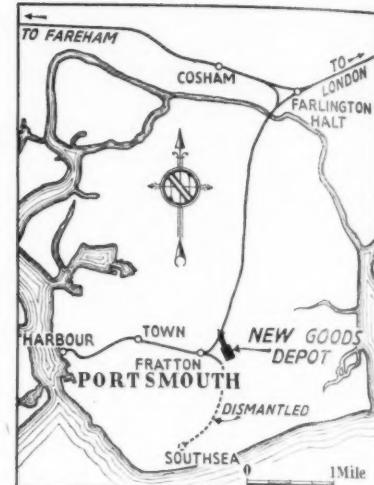
New Portsmouth and Southsea Goods Depot, Southern Railway

On Monday next, July 6, a new goods depot, to be known as Portsmouth and Southsea will be opened by the Southern Railway at Fratton. On that date the company's present goods depot adjoining Portsmouth and Southsea passenger station will be closed, and all classes of goods traffic will be dealt with at the new depot. The position of this is indicated on the accompanying key map and its general layout is shown on the plan. As will be seen, the offices are situated immediately inside the entrance to the new depot in Goldsmith Avenue; offices adjoining the goods shed have been provided for the company's cartage agents, Chaplins Limited.

A spacious goods shed, one of the largest in the provincial area of the South of England, has been built in the new depot, with a modern storage warehouse having a superficial floor area of approximately 13,000 sq. ft. This is available for letting either under

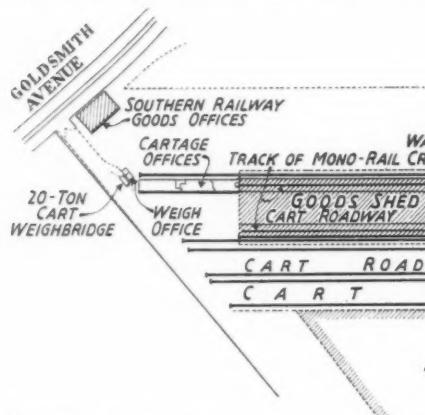
a fixed-space arrangement or at tonnage rates. The terms for storage at tonnage rates vary according to the class of traffic and the services to be performed by the Southern Railway; the charge under the fixed-space method is 5s. 3d. per sq. yd. per annum, for a minimum space of 20 sq. yd. and a minimum period of six months. No rates or taxes are payable by the tenant, and the charges for unloading, placing into warehouse and reloading, varying with the nature of the traffic to be handled, are low. The Southern Railway will also undertake to keep stock records on behalf of traders, if so desired, at a nominal charge.

In addition to this covered storage, accommodation is provided in the goods yard for traffic not requiring covering. The yard is equipped with a 10-ton electric gantry, a 30-ton truck weighbridge, and a 20-ton cart weighbridge.

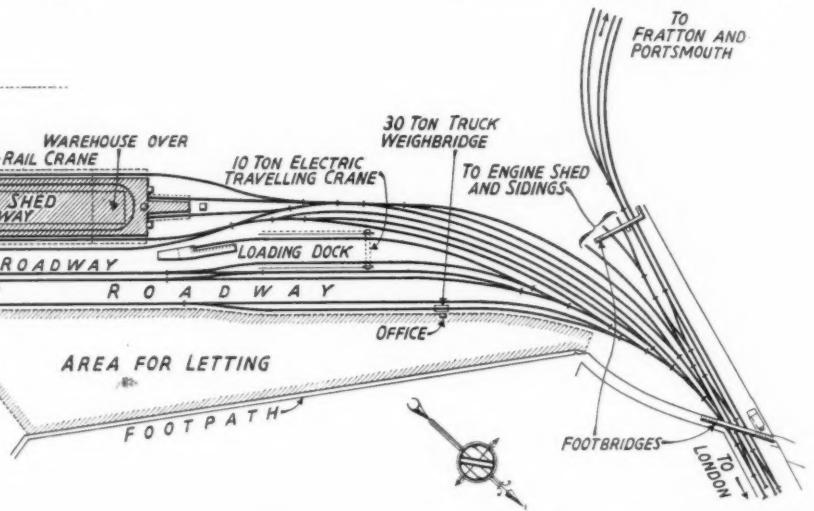


Key map

The new depot was officially inaugurated yesterday (Thursday), when, at noon, the Lord Mayor of Portsmouth performed the opening ceremony.



Layout of the new Southern Railway Portsmouth goods depot



The Furka-Oberalp Railway

(From our Swiss Correspondent)

Today (July 3) the Furka-Oberalp Railway is commemorating the tenth anniversary of its completion. This 97-km. metre-gauge line was first planned in 1907, and a company was formed in 1910 (chiefly with French capital) for its construction, but the first section, from Brigue to Gletsch, was not opened until 1915. Work on the remainder of the line had to be suspended in the following year owing to the war and lack of capital. In December, 1923, the company was declared insolvent, but a syndicate, headed by M. A. Marguerat of the Visp-Zermatt Railway, was formed in 1924 to work the existing section of the railway and to complete the partly-

constructed Gletsch-Disentis portion. The line was put up for auction and acquired for fr. 1,750,000 by M. Marguerat on April 4, 1925, after which work was rapidly pushed forward, and through traffic between Brigue and Disentis began on July 3, 1926. The opening of the short connecting line from Brigue to Visp (Viège), in 1930, completed a remarkable alpine metre-gauge system 483 km. in extent, and enabled the Furka-Oberalp, Brigue-Visp-Zermatt, and Rhætian Railways to run a through train, the well-known Glacier Express, between Zermatt and St. Moritz.

There are 11 rack sections equipped on the Abt system, totalling 31.8 km.,

between Brigue and Disentis; the maximum gradient on them is 11 per cent. The most interesting engineering features of the line are the Furka tunnel, 1,850 m. in length, and the Steffenbach removable bridge, which is dismantled each autumn and re-erected in June; it was specially designed for this purpose, to replace an earlier bridge which had been destroyed by avalanches. The mountain section between Oberwald and Sedrun is closed to traffic during the winter, except for the short distance from Andermatt to Nätschen, on which winter sports trains are run. The rolling-stock of the Furka-Oberalp Railway consists of ten 2-6-0 34-tonne steam locomotives; 22 bogie, and 9 four-wheeled coaches; 2 petrol railcars; 9 luggage and mail vans; and 40 goods and service vehicles.

NOTES AND NEWS

Pullman Buffet Car on Newhaven Boat Trains.—The Pullman car *Myrtle* has been converted into a buffet car to run on Newhaven boat trains on and from July 5.

Entre Ríos Railways.—The interest moratorium on the 5 per cent. debentures of the Entre Ríos Railways, which was due to expire on Wednesday (July 1), has been extended to July 1, 1937.

Railway Dividend Announcements.—The dates on which announcements as to interim dividends are likely to be made by the following railway companies are: July 23, Southern; July 24, London & North Eastern; July 30, London Midland & Scottish; July 31, Great Western; August 7, Great Southern Railways (Ireland).

South African Airways.—On Monday afternoon Mr. T. H. Watermeyer, General Manager, South African Railways and Harbours, gave a reception at South Africa House, Trafalgar Square, London. After light refreshments the guests were shown a number of excellent films of South African scenes taken from the aircraft of the South African Railways.

Hungarian Budget.—The budget of the Hungarian State Railways for the fiscal year 1936-37 estimates that the working expenditure will be 197,974,000 pengos and the receipts 220,650,000 pengos. When all capital and other charges have been met the estimated deficit is 54,239,000 pengos. It is anticipated that passenger traffic will bring in a revenue of 68,860,000 pengos and goods traffic 135,780,000 pengos.

Diesel Engine Users Association.—The summer meeting of the Diesel Engine Users Association will take place at Loughborough on Wednesday, July 8, when inspections will be made of the generating station and engineering laboratories of Loughborough College and the works of the Brush Electrical Engineering Co. Ltd. Luncheon will be taken at the King's Head Hotel, and, at the conclusion of the inspection of works there will be a general meeting in the lecture theatre of Loughborough College.

Colour-Light Signalling for Cow-lairs, L.N.E.R.—The L.N.E.R. has prepared a scheme for replacing the existing mechanical signalling in the Cow-lairs area by electrical operation of signals and points. The scheme provides for multiple-aspect colour-light signals, with route indicators and subsidiary signals as required, and for continuous track circuiting of all main running lines. The present work of five mechanical boxes is to be concentrated in two boxes having either miniature lever frames or relay interlocking panels, as found most desirable. Current will be taken from the Glasgow Corporation supply, but a small stand-by plant will be available for emergencies. The

scheme has been prepared to the designs of Mr. A. Moss, Signal and Telegraph Engineer, L.N.E.R.

Thames Valley Strike Settled.—The unofficial strike of busmen employed by the Thames Valley Traction Co. Ltd. which had lasted for nearly three weeks, and included the Ascot meeting, ended on Wednesday. It was agreed that the men should resume work yesterday without victimisation.

New G.W.R. Halt.—A halt at Whitlock's End, between Grimes Hill and Shirley, near Birmingham, was opened on Monday last, July 6. Most of the local services between Birmingham, Henley-in-Arden, and Stratford-upon-Avon call here. It has been built by the G.W.R. to provide a further dormitory for Birmingham.

New L.N.E.R. Durham Coast Halt.—A halt at Hawthorn Tower, near Seaham, serving the estate purchased by the Trustees of the Jubilee Trust for a juvenile holiday camp, was used for the first time on Saturday last, July 4, in connection with the visit to the holiday camp of a party of 350 children from Newcastle and district. Two platforms, each 320 ft. long, adjoin the grounds of the estate.

Buenos Aires Central Railway.—At meetings on June 25 of note-holders and debenture holders in the Buenos Aires Central Railway, resolutions were passed in favour of the scheme of arrangement, which provides for an extension for a further two years to April 1, 1938, of the moratorium on the 4½ per cent. first mortgage debentures, and up to May 10, 1938, of the moratorium on the 5 per cent. second mortgage debentures and the 6½ per cent. 10-year secured notes.

L.M.S.R. Locomotive Naming Ceremony.—On Tuesday afternoon last, Lt.-Col. L. S. Lloyd, Colonel-Commandant of the 3rd Carabiniers, unveiled the nameplate, surmounted by the regimental badge, of the L.M.S.R. "Royal Scot" class locomotive, No. 6125, which has been named after the 3rd Carabiniers. The ceremony took place at No. 1 platform, Euston station, in the presence of a guard of honour, a group of trumpeters, and a large gathering of old comrades. Sir Josiah Stamp, who presided, entertained to a luncheon beforehand a number of senior officers and ex-officers of the regiment.

Ardrossan - Arran Mail Service.—A contract dated June 19, 1936, between the Postmaster-General and the London Midland & Scottish Railway Company provides for a new mail service between Ardrossan and the Isle of Arran. Hitherto the mails have arrived at Arran at 11.5 a.m. Under the new contract the company provides a steamer for an additional dispatch of

mails from Ardrossan at 6.40 a.m., which gives a delivery at Arran two to three hours earlier than before. The new contract is for five years certain from July 1, 1936. Payment will vary with the amount of mail matter carried, but subject to a maximum of £1,500 per annum.

Fire-Proofing of Timber.—Speaking at the annual general meeting of the Timber Development Association, on June 24, Mr. E. H. B. Boulton, Technical Director of the association, said that the Forest Products Research Laboratory at Princes Risborough was at present carrying out tests on behalf of the Timber Development Association in regard to the fire-proofing of timber, and he was hopeful that they would result in a satisfactory process of fire-proofing at one-sixth to one-eighth of present costs.

New G.W.R. 4-4-0 Engines.—A new series of 4-4-0 locomotives, to be known as the "Earl" class, is under construction at the G.W.R. Swindon works. The first ten engines will be numbered 3200 to 3209 inclusive, and No. 3200 is named *Earl of Mount Edgcumbe*. The new engines are to replace "Dukes" and "Bulldogs" in the Central Wales and Cambrian Coast areas, and incorporate recoverable parts from the two older series as these are broken up. Driving wheels are 5 ft. 8 in. dia., boiler pressure 180 lb. per sq. in., and tractive effort 18,955 lb. The tender carries 3,500 gall. of water and 6 tons of coal.

Cordoba Central Railway.—A meeting of the 4½ per cent. first debenture stockholders of the Cordoba Central Railway Company is called for July 6 to sanction an extension of the existing moratorium, which ends on October 1 next. In a circular issued to stockholders the directors propose to extend the moratorium to cover, if necessary, the half-yearly interest payments falling due up to and including April 1, 1939. They explain that although there has been a further slight reduction in operating expenses, and the exchange loss on remittances has been somewhat less, the credit balance for the year to June 30, 1936, will be comparatively small, and there is still owing £250,000 for income tax, besides other liabilities.

Northern Aluminium Company's New Laboratories.—A new laboratory building has been completed by the Northern Aluminium Co. Ltd. at Banbury, and marks another stage in the extension of the firm's activities there. The greater part of the total floor area of 13,750 sq. ft. is occupied by laboratories, and the remainder is for administrative offices. The laboratory equipment has been increased by the addition of a Wöhler type fatigue testing machine, one more Amsler tensile testing machine, and an Izod impact machine. An X-ray unit and a projection microscope are provided. New equipment in the research department will allow this work to be much extended. Aluminium

July 3, 1936

and aluminium alloys have been widely used in the construction of the new building.

Road Accidents.—The Ministry of Transport return for the week ended June 27 of persons killed or injured in road accidents is as follows. The figures in brackets are those for the corresponding period of last year:—

	Killed, including deaths resulting from previous accidents		Injured
England	...	107 (97)	4,948 (4,742)
Wales	...	5 (7)	252 (233)
Scotland	...	14 (7)	499 (416)
	126 (111)	5,699 (5,391)	

The total fatalities for the previous week were 134, compared with 118 for the corresponding period of last year.

L.M.S.R. International Ambulance Competition.—The annual L.M.S.R. International Ambulance Competition between three teams representing England and Wales *versus* three representing Scotland, was held at the Euston Hotel on Thursday, June 25. The maximum number of points possible was 330, and the teams were placed as follow:—

1. Crewe, 261½ points.
2. Bushbury depot, Wolverhampton, 242 points.
3. Mossend, Glasgow, 223 points.
4. Bridgeton, Glasgow, 220½ points.
5. Manchester, Mayfield Depot, 215 points.
6. Polmadie, Glasgow, 186½ points.

Sir Josiah Stamp, who presented the prizes at the conclusion, said that there were no fewer than 24,000 fully-qualified ambulance men in the service of the L.M.S.R.

Electrical Engineers Visit Rugby.—A party of about 250 members and guests of the South Midland Centre of the Institution of Electrical Engineers visited the Rugby works of the British Thomson-Houston Co. Ltd. on June 30. At luncheon Mr. H. N. Sporborg, M.I.E.E., Director and Chief Engineer, was in the chair, and his welcome was endorsed in an able speech by Sir Felix J. C. Pole, Chairman of Associated Electrical Industries Limited. The company was afterwards guided round the works in small parties. Items of particular railway interest included some of the 35 mercury-arc rectifiers being manufactured for the South African Railways and six units for the L.N.E.R. South Shields electrification scheme, while there were also to be seen many high-speed circuit-breakers for the Southern and other railway systems.

Northern Ireland Traffics.—On railways wholly in Northern Ireland, the number of passengers (exclusive of season-ticket holders) carried during the first quarter of 1936 was 851,522, against 808,949 in the first quarter of 1935, and receipts from passengers were £44,473, compared with £40,953. Merchandise and minerals carried in the first quarter of 1936 were 169,021 tons, against 138,160 in the corresponding quarter of 1935, and the total receipts from goods traffic were £61,405, compared with £45,299. On railways partly in Northern Ireland, passengers in the

first quarter of 1936 numbered 1,038,180, against 995,300 in the corresponding quarter of 1935, and passenger receipts were £80,093, compared with £77,680. Goods and minerals carried in the first quarter of 1936 were 247,633 tons, compared with 245,145 in the corresponding quarter of 1935, and total receipts from goods traffic amounted to £163,824, against £151,637.

New R.A.S. Sunday Services.—A Sunday air service between South Wales and the South Coast will be introduced on Sunday next, July 5, by Railway Air Services. On the journey south the plane will leave Cardiff at 9.45 a.m. and will be due at Weston-super-Mare at 9.55 a.m., Bristol at 10.10 a.m., Southampton at 10.55 a.m., the Isle of Wight at 11.15 a.m., and the Brighton, Hove, and Worthing airport at 11.45 a.m. The return plane will leave the Brighton, Hove and Worthing airport at 5.40 p.m. and, calling at the same places as on the forward journey, will reach Cardiff airport at 7.40 p.m. Day excursion tickets, at a reduction of approximately 20 per cent., will be issued for these Sunday services, as well as for those on Tuesdays, Wednesdays, and Thursdays.

New Extension in W. Quebec Mining Area Sanctioned.—In spite of the protests of the Canadian National and Temiskaming & Northern Ontario Railways, referred to on page 1102, in our issue of June 5, the Railway Committee of the Quebec legislature has, states a Reuters message, granted permission to the Canadian Pacific Railway to construct the Angliers-Senneterre section of line through the Noranda mining area, about 100 miles in length. The further extension into the Chibougamau mining district has not yet been sanctioned. A later message states that a Canadian National line through the same area—from Rouyn to Senneterre—has also been sanctioned by the Federal Parliament, and is certain to be built; it is uncertain whether the C.P.R. line will materialise or not. The C.N.R. line will be 99 miles long and is estimated to cost \$6,000,000 or about \$60,000 a mile.

A Timber Show Train.—In order to bring before the widest number of potential users the attractions of wood in its many forms, the Timber Development Association is sending a show train, bearing the slogan "Wood for Good" and containing many samples of different kinds of wood, on a three months' tour of England, Scotland, and Wales. In addition there is a series of photographs illustrating the various uses of wood, and a collection of models of timber houses of various styles and periods. The train, which consists of two coaches, the exteriors of which are faced with cellulose-sprayed birch plywood, left Paddington on Monday last, and the send-off ceremony was performed by Earl de la Warr, M.P., Parliamentary Secretary to the Board of Education. The lighting on the train, provided by a generating plant supplied by R. A. Lister & Co. Ltd., of Dursley, Glos., consists of a

Lister 14-h.p. two-cylinder diesel engine, running at a speed of 1,000 r.p.m. and driving a generator, having an output of 7.5 kW. at 110 volts, together with a 52-cell portable battery, having a capacity of 50 a.h. The plant is mounted on an isolated foundation to prevent the transmission of vibration to the coach, and special inverted V-shaped pads are used to take the shunting shocks. The display coach is lighted by an elaborate system of indirect lighting and a long row of central fittings with opal shades. The small battery, charged from the set during the day, provides light for the train staff during the early hours of the morning, and after the display coach has been shut down in the evening, R. A. Lister & Co. Ltd. has been responsible for the generating plants in all the show trains, three in number, which have so far toured Great Britain.

Southern and Great Western Summer Timetables

In the summer timetables of the Southern Railway, operative from Sunday next, although no spectacular changes are made, the slow but sure process of time-paring which has been in evidence on this system during recent years is continued. The up Bournemouth Belle will be booked between Bournemouth and Waterloo in the even two hours inclusive of a stop at Southampton Central, a cut in running time of 10 min. The down Bournemouth Belle will take 126 min. (2 min. less than now), but the down Bournemouth Limited will make the non-stop run of 108 miles in 116 min. (55.9 m.p.h.), the quickest time yet scheduled between London and Bournemouth. The latter train will reach Weymouth in 2 hr. 54 min., and the corresponding up train will reduce the time to 2 hr. 53 min.—again the quickest on record between Weymouth and London. The 7.35 a.m. from Bournemouth Central will reach Waterloo at 10 a.m., 7 min. earlier than now.

Another interesting feature of the alterations over this section is that Southampton Central will now have a fast train to Waterloo at 20 minutes past each hour from 11.20 a.m. to 7.20 p.m. inclusive, corresponding to the hourly services from Waterloo at 30 minutes past the hour from 8.30 a.m. to 7.30 p.m. inclusive. On the West of England line the first (Ilfracombe) portion of the Atlantic Coast Express will run to Salisbury, 83.8 miles, in the hitherto unprecedented time of 86 min., at 58.5 m.p.h. start-to-stop which is the first booked run in Southern annals to exceed 58 m.p.h.; the time of 3 hr. 7 min. to Exeter (171.8 miles), and 4 hr. 57 min. to Ilfracombe (16 min. quicker than now) are also both records for the Southern Railway; the corresponding up train will take 3 hr. 10 min. from Exeter to Waterloo. The 7.20 a.m.

front
earlier
the
earlier
are
incl
at
Ex
two
up
Exc
loo
whi
is b
wit
train
15
bot
elec
ing
will
Wa
Effi
Wi
Wa
wh
G
L.
Pass
M
Co
Goo
Tot
L.
Pass
M
Co
Goo
Tot
G.
Pass
M
Co
Goo
Tot
Pass
M
Co
Goo
Tot
Pass
M
Co
Goo
Tot
Live
(6
Men
*Loc
T
Belt
(8
*Gr
(5
*Gr
(2
cor
XUM

from Exeter is to arrive 11 min. earlier than now, at 10.59 a.m., and the 10.28 a.m. from Exeter 8 min. earlier, at 2.1 p.m. Sunday services are better than those of last year, and include a down Atlantic Coast Express, at 10.50 a.m. from Waterloo, reaching Exeter in 3 hr. 14 min. and Ilfracombe two hours later, with a corresponding up service from Ilfracombe at 2.40 and Exeter at 5.35 p.m., reaching Waterloo at 7.50 p.m. Another section over which systematic times are introduced is between Exeter and Exmouth, where with one or two exceptions half-hourly trains are run throughout the day, at 15 and 45 min. past the hour from both Exeter and Exmouth. As to the electric services, to cope with increasing traffic, three extra trains an hour will run between Motspur Park and Waterloo, enabling the Dorking and Epsom trains to call only at Wimbledon between Motspur Park and Waterloo, except during the rush hours, when they will be non-stop.

On the Great Western Railway this year's summer timetables are practically identical with those of last year, apart from the railcar services which have been introduced in the interim, and a few additional trains on Saturdays and Sundays. The only alteration of note is the disappearance of the Cornishman—the express which left Paddington at 10.35 a.m. last year to enable the Cornish Riviera Express to convey passengers for Truro and beyond only. Except on Saturdays the latter now stops daily at Plymouth, in 4 hr. from Paddington, and also carries the Newquay coach, detached at Par, so that the times to Truro and beyond are 10 min. slower than those of last year. The service to Exeter and Torquay given by the existing 10.35 a.m. down is given by the summer 11 a.m. train; the 10.35 a.m. runs to Weymouth only, and will include a stop at Reading in an overall time of 99 min. for the 95.6 miles from Paddington to Westbury.

British and Irish Traffic Returns

GREAT BRITAIN	Totals for 26th Week			Totals to Date		
	1936	1935	Inc. or Dec.	1936	1935	Inc. or Dec.
L.M.S.R. (6,917 mls.)	£	£	£	£	£	£
Passenger-train traffic...	610,000	655,000	— 45,000	11,379,000	11,361,000	+ 18,000
Merchandise, &c.	478,000	456,000	+ 22,000	12,274,000	11,600,000	+ 674,000
Coal and coke	195,000	186,000	+ 9,000	6,408,000	6,163,000	+ 245,000
Goods-train traffic...	673,000	642,000	+ 31,000	18,682,000	17,763,000	+ 919,000
Total receipts	1,283,000	1,297,000	— 14,000	30,061,000	29,124,000	+ 937,000
L.N.E.R. (6,332 mls.)	£	£	£	£	£	£
Passenger-train traffic...	378,000	386,000	— 8,000	7,414,000	7,402,000	+ 12,000
Merchandise, &c.	317,000	328,000	— 11,000	8,334,000	8,062,000	+ 272,000
Coal and coke	197,000	201,000	— 4,000	6,114,000	5,864,000	+ 250,000
Goods-train traffic...	514,000	529,000	— 15,000	14,448,000	13,926,000	+ 522,000
Total receipts	892,000	915,000	— 23,000	21,862,000	21,328,000	+ 534,000
G.W.R. (3,746½ mls.)	£	£	£	£	£	£
Passenger-train traffic...	228,000	244,000	— 16,000	4,720,000	4,713,000	+ 7,000
Merchandise, &c.	194,000	186,000	+ 8,000	4,856,000	4,654,000	+ 202,000
Coal and coke	90,000	91,000	— 1,000	2,651,000	2,597,000	+ 54,000
Goods-train traffic...	284,000	277,000	+ 7,000	7,507,000	7,251,000	+ 256,000
Total receipts	512,000	521,000	— 9,000	12,227,000	11,964,000	+ 263,000
S.R. (2,154 mls.)	£	£	£	£	£	£
Passenger-train traffic...	359,000	363,000	— 4,000	7,145,000	7,110,000	+ 35,000
Merchandise, &c.	69,500	76,000	— 6,500	1,586,500	1,582,500	+ 4,000
Coal and coke	27,500	33,000	— 5,500	837,500	791,500	+ 46,000
Goods-train traffic...	97,000	109,000	— 12,000	2,424,000	2,374,000	+ 50,000
Total receipts	456,000	472,000	— 16,000	9,569,000	9,484,000	+ 85,000
Liverpool Overhead ... (6½ mls.)	1,324	1,318	+ 6	29,797	29,610	+ 187
Mersey (4½ mls.) ...	3,990	3,941	+ 49	105,086	104,033	+ 1,053
*London Passenger Transport Board ...	576,830	569,900	+ 6,900	28,477,300	28,096,900	+ 380,400
IRELAND						
Belfast & C.D. pass. (89 mls.)	3,825	3,507	+ 318	53,596	54,221	— 625
" " goods	600	526	+ 74	14,208	12,829	+ 1,379
" " total	4,425	4,033	+ 392	67,804	67,050	+ 754
*Great Northern pass. (543 mls.)	11,550	11,300	+ 250	222,750	216,300	+ 6,450
" " goods	8,450	8,200	+ 250	242,150	231,100	+ 11,050
" " total	20,000	19,500	+ 500	464,900	447,400	+ 17,500
*Great Southern pass. (2,076 mls.)	42,659	38,328	+ 4,331	769,369	757,098	+ 12,271
" " goods	35,411	34,871	+ 540	1,025,380	969,954	+ 55,426
" " total	78,070	73,199	+ 4,871	1,794,749	1,727,052	+ 67,697

* 52nd week, the receipts for which include those undertakings not absorbed by the L.P.T.B. in the corresponding period last year; last year's figures are, however, adjusted for comparative purposes.

British and Irish Railways Stocks and Shares

Stocks		Highest 1935	Lowest 1935	Prices	
				July 1, 1936	Rise/ Fall
G.W.R.					
Cons. Ord.	55 ¹ ₂	44 ¹ ₂	47	-1 ₂	
5 ⁰ ₀ Con. Prefee.	124	108	118	—	
5 ⁰ ₀ Red.Pref.(1950)	117	106 ⁵ ₄	111 ¹ ₂	—	
4 ⁰ ₀ Deb.	118 ¹ ₂	108	111 ¹ ₂ *	-1 ₂	
4 ¹ ₀ ⁰ Deb....	122	110	116 ¹ ₂ *	—	
4 ¹ ₀ ⁰ Deb....	129 ¹ ₂	118	122 ¹ ₂ *	-1	
5 ⁰ ₀ Deb.	140 ¹ ₄	130	136 ¹ ₂ *	—	
2 ¹ ₀ ⁰ Deb....	82 ¹ ₄	68 ¹ ₂	76 ⁹	—	
5 ⁰ ₀ Rt. Charge	137	128	131 ¹ ₂ *	—	
5 ⁰ ₀ Cons. Guar.	136 ⁵ ₄	120 ¹ ₂	131	+1 ₂	
L.M.S.R.					
Ord.	25 ⁵ ₁₆	16	22 ¹ ₂	-1 ₂	
4 ⁰ ₀ Prefee. (1923)	58 ¹ ₄	43 ¹ ₂	69	+1 ₂	
4 ⁰ ₀ Prefee.	87 ¹ ₂	73 ¹ ₂	84 ¹ ₂	—	
5 ⁰ ₀ Red.Pref.(1955)	107	97 ⁵ ₄	107 ¹ ₂	—	
4 ⁰ ₀ Deb.	110 ¹ ₄	99 ¹ ₂	106 ¹ ₂	-1 ₂	
5 ⁰ ₀ Red.Pref.(1952)	119 ¹¹ ₁₆	111 ⁵ ₁₆	116 ¹ ₂	—	
4 ⁰ ₀ Guar.	105 ⁸ ₈	95 ¹ ₂	103	—	
L.N.E.R.					
5 ⁰ ₀ Pref. Ord.	157 ₈	81 ₄	10	—	
Def. Ord.	79 ¹ ₆	4 ⁵ ₄	5	—	
4 ⁰ ₀ First Prefee.	74 ³ ₄	48	66 ¹ ₂	—	
4 ⁰ ₀ Second Prefee.	31 ³ ₄	16 ¹ ₄	24 ² ₁	+1 ₂	
5 ⁰ ₀ Red.Pref.(1955)	92 ¹ ₄	71	92 ¹ ₂	—	
4 ⁰ ₀ First Guar.	103 ¹¹ ₁₆	93	100	—	
4 ⁰ ₀ Second Guar.	98 ⁵ ₄	82 ¹ ₂	94	—	
3 ⁰ ₀ Deb.	86	75	82	—	
4 ⁰ ₀ Deb.	109 ⁴ ₁	98 ¹ ₂	105 ¹ ₂	-1 ₂	
5 ⁰ ₀ Red. Deb.(1947)	118 ⁴ ₁	106 ¹ ₂	111 ¹ ₂	-1	
4 ¹ ₀ ⁰ Sinking Fund	112 ¹ ₂	108	109	—	
Red. Deb.					
SOUTHERN					
Pref. Ord....	87 ¹ ₂	69 ⁵ ₈	91	—	
Def. Ord.	25 ¹³ ₁₆	16 ⁵ ₄	21 ¹ ₂	-1	
5 ⁰ ₀ Prefee.	124	108 ¹ ₄	120	—	
5 ⁰ ₀ Red.Pref.(1964)	117 ⁵ ₄	109 ¹ ₂	118 ¹ ₂	—	
5 ⁰ ₀ Guar. Prefee.	136 ¹ ₂	121 ¹ ₂	130 ¹ ₂	—	
5 ⁰ ₀ Red.Guar.Pref.	121 ¹ ₄	112 ¹ ₂	119 ¹ ₂	—	
(1957)					
4 ⁰ ₀ Deb.	116 ⁵ ₄	107	110	-1 ₂	
5 ⁰ ₀ Deb.	138	130 ¹ ₄	135 ¹ ₂	-1	
4 ⁰ ₀ Red. Deb.	115	106 ¹ ₂	111	-1	
1962-67					
BELFAST & C.D.					
Ord.	9	4	6	—	
FORTH BRIDGE					
4 ⁰ ₀ Deb.	111 ¹ ₄	104 ¹ ₄	104 ¹ ₂	—	
4 ⁰ ₀ Guar.	109 ⁷ ₈	104	104 ¹ ₂	—	
G. NORTHERN (IRELAND)					
Ord.	20	7	16 ¹ ₂	—	
G. SOUTHERN (IRELAND)					
Ord.	57 ¹ ₂	141 ₂	59 ¹ ₂	—	
Prefee.	50	25 ¹ ₄	60	-1 ₂	
Guar.	88 ³ ₄	51 ¹ ₄	85	-7 ₈	
Deb.	86 ¹ ₄	70	89 ⁵ ₄	—	
L.P.T.B.					
4 ¹ ₀ ⁰ "A"	130	119 ⁵ ₄	122 ¹ ₂	-1	
5 ⁰ ₀ "A"	139 ³ ₄	130	133 ¹ ₂	—	
4 ¹ ₀ ⁰ "T.F.A."	113 ³ ₄	108	109	—	
5 ⁰ ₀ "B"	131 ¹ ₂	122 ⁵ ₄	127	—	
"C"	109 ¹ ₂	91	104	+2	
MERSEY					
Ord.	23 ¹ ₈	91 ₄	24 ¹ ₂	-1	
4 ⁰ ₀ Perp. Deb.	100 ¹ ₂	93 ¹ ₂	99 ¹ ₂	—	
3 ⁰ ₀ Perp. Deb.	75 ¹ ₂	67	76	—	
3 ⁰ ₀ Perp. Prefee.	62	47 ¹ ₄	64 ¹ ₂	—	

* ex dividend.

July 3, 1936

CONTRACTS AND TENDERS

Hudswell Clarke & Co. Ltd. has received an order for 12 diesel locomotives for New Zealand, also an 88 h.p. and two 20 h.p. diesel locomotives for industrial purposes in the Midlands.

L.N.E.R. Wagon Orders

As anticipated in THE RAILWAY GAZETTE last week, the L.N.E.R. has placed large orders for wagons as follow:—

Metropolitan-Cammell Carriage & Wagon Co. Ltd., 500 20-ton hopper coal wagons, Birmingham Railway Carriage & Wagon Co. Ltd., 500 20-ton hopper coal wagons, and 350 12-ton hopper wagons.

G. R. Turner Limited, 350 12-ton hopper wagons.

R. Y. Pickering & Co. Ltd., 350 12-ton hopper wagons, and 200 12-ton open goods wagons.

Charles Roberts & Co. Ltd., 350 12-ton hopper wagons.

S. J. Claye Limited, 400 12-ton open goods wagons.

W. R. Davies & Co. Ltd., 400 12-ton open goods wagons.

Hurst Nelson & Co. Ltd., 200 12-ton open goods wagons.

William Rigley & Sons Ltd., 200 12-ton open goods wagons.

Thomas Burnett & Co. Ltd., 100 12-ton open goods wagons.

The North British Locomotive Co. Ltd. has secured an order for a 4-10-4 tender locomotive for the South African Railways.

Large South African Orders Anticipated

The South African Railways & Harbours Administration is about to place orders both in this country and on the continent for a large number of wagons and passenger coaches.

Loudon Bros. Ltd. has received an order from the Great Western of Brazil Railway for one locomotive wheel lathe and hand-operated hoist.

The Quasi Arc Co. Ltd. has received an order from the Central Uruguay Railway for one Quasi-Arc single-operator portable diesel-engine-driven electric arc welding set.

The G.W.R. has placed contracts as follow:—

R. Pratt & Son Ltd., four Fordson-Sussex normal control chassis.

R. A. Lister & Co. Ltd., two 2-ton Lister autotrucks and stillages.

Eagle Engineering Co. Ltd., an articulated trailer chassis for a horse-box body.

Ericsson Telephones Limited, provision of a hundred additional telephone lines at the G.W.R. Royal Hotel, Paddington station.

Principality Wagon Co. Ltd., six movable rubber floored bodies for road motor vehicles.

Express Motor & Body Works Limited, two Morris 3-ton chassis, two Morris 4-ton tipping chassis, and ten Morris tractor chassis.

Scammell Lorries Limited, four Scammell 3-ton trailer chassis.

Taskers of Andover (1932) Limited, a horse-box body for an articulated trailer chassis, 13 articulated trailer chassis, six articulated low loading trailer chassis, ten sets of articulated vehicle coupling gear for fitting to tractors, and 20 sets for fitting to trailers.

Wadkin & Co., planing and moulding machine.

The Churchill Machine Tool Co. Ltd., plain cylindrical grinding machine.

Butterworth British Automatic Machine Tool Company, automatic screw machine.

The Coventry Machine Tool Works Limited, two bolt-forging machines.

United Water Softeners Limited has received an order from the Great Western of Brazil Railway for one Zerolit water softening plant.

N.Z. Orders for Electric Rolling Stock

The English Electric Co. Ltd. has been awarded a contract by the New Zealand Government for six twin-coach all-steel electric train sets. The trains are for a 1,500 volt d.c. system. These will be the first electric motor coach sets to be put into service on the New Zealand Railways, and are to be used for operating high-speed schedules on the suburban system from Wellington to Johnsonville. They are, moreover, the first all-steel coaches to be put into service in that country. The seating capacity of each train will be over 140, and the upholstering is to be carried out by the New Zealand Government Railways workshops.

The English Electric Co. Ltd. has also received an order for equipment for two high-speed passenger electric locomotives as an extension to the order placed in December of last year for a number of similar locomotives. The value of these combined orders is approximately £100,000.

The South African Railways and Harbours Administration is calling for tenders, to be presented in Johannesburg by August 31, for the supply of 48 traction motors for electric locomotives. Further particulars may be obtained from the Department of Overseas Trade.

The South African Railways & Harbours Administration is calling for tenders for the supply and delivery of copper and steel plates for locomotive boilers, and perforated spark arrestor mild steel plates. Further details may be obtained from the Department of Overseas Trade.

The Bengal & North Western Railway is prepared to receive tenders for the supply of four Y.B. type locomotives and tenders.

The Bombay, Baroda & Central India Railway is prepared to receive tenders for axles for locomotives and tenders, laminated springs, and steel boiler flue and arch tubes.

The Argentine State Railways Administration is calling for tenders to be presented in Buenos Aires by August 6, for the supply and delivery of seamless copper tubes of various sizes. Further particulars may be obtained from the Department of Overseas Trade.

Wagon Repairs Limited

Application is being made to the Committee of the Stock Exchange, London, for permission to deal in the preference shares of Wagon Repairs Limited, which on June 18 was converted from a private into a public company. The company was incorporated as a private company in 1918. It was formed by nine leading wagon companies, namely: Birmingham Railway Carriage & Wagon Co. Ltd.; British Wagon Co. Ltd.; S. J. Claye Limited; Harrison & Camm Limited; Gloucester Railway Carriage & Wagon Co. Ltd.; Hurst, Nelson & Co. Ltd.; Metropolitan-Cammell Carriage & Wagon Co. Ltd.; Midland Railway Carriage & Wagon Co. Ltd.; North Central Wagon Co. Ltd., in order to concentrate in the new company their respective railway wagon businesses (excluding the portion carried on at their respective head works).

In 1927 the shares in the company owned by Harrison & Camm Limited were acquired *pro rata* by the other companies owning shares in the company, and in 1928 the shares owned by the British Wagon Co. Ltd., the Birmingham Railway Carriage & Wagon Co. Ltd., and S. J. Claye Limited were acquired by Hurst, Nelson & Co. Ltd. The wagon repairing businesses of certain assets and goodwill of the repairing businesses carried on by the following other wagon-owning companies or firms have been acquired at the dates now mentioned: 1925, R. Y. Pickering & Co.

Ltd. and Hamilton Wagon Company; 1930, Charles Roberts & Co. Ltd.; 1931, C. Clough & Co.; 1932, Lincoln Wagon & Engine Co. Ltd., and Yorkshire Railway Wagon Co. Ltd.; 1933, W. R. Davies & Co. Ltd. In 1933 the company also acquired the whole of the issued share capital of the Wigan Wagon Co. Ltd.

When the company was converted into a public company the capital was re-organised, and the authorised capital is now £500,000 in 5 per cent. cumulative preference shares of £1 each and £1,000,000 in ordinary shares of £1 each. The issued capital is £500,000 in preference and £529,000 in ordinary shares. The issued share capital is at present held by the following companies:—Gloucester Railway Carriage & Wagon Co. Ltd.; Hurst, Nelson & Co. Ltd.; Metropolitan-Cammell Carriage & Wagon Co. Ltd.; Midland Railway Carriage & Wagon Co. Ltd.; North Central Wagon Co. Ltd.; and Charles Roberts & Co. Ltd., known as "The Wagon Companies."

The company owns 35 well equipped works and approximately 350 repairing depots situated at important points in the coalfields and at the chief railway junctions and examination sidings in England, Scotland, and Wales. It is chiefly engaged in repairing privately-owned and other railway wagons and tank cars, in buying and selling wagons, and in manufacturing and repairing wagon parts. Last financial year it repaired over 400,000 wagons.

T
sp
O
T
ent
wi
lat
F
cha
sta
T
acc
2
the
coa
at
July
wee
has
mer
lat
G.B.
dian
at p
(th
mu
fol
dire
the
pan
ann
link
the
conv
Maj
respo
Maj
great
keen
they
the
their
the
the
H
Gen
" P
sage
dian
thank
Canad
loyal
fifti
way
has p
develo
Canad
Sir
the
sages
" I
lations

YUM

OFFICIAL NOTICES

The Bengal & North Western Railway Company Limited

THE Directors are prepared to receive Tenders for the supply of:—Four Y.B. Type Locomotive Engines and Tenders as per specification to be seen at the Company's Offices.

Tenders addressed to the undersigned, and envelope marked "Tenders for Locomotives," with name of firm tendering, to be lodged not later than Noon on the 28th day of July, 1936.

For each Specification a fee of £1 will be charged, which cannot, under any circumstances, be returned.

The Directors do not bind themselves to accept the lowest or any Tender.

By Order of the Board,

W. R. IZAT,
Managing Director.

237, Gresham House,
Old Broad Street,
London, E.C.2.
30th June, 1936.

The Chinese Government Purchasing Commission

THE Commission is prepared to receive Tenders from British manufacturers only for the supply of:—

(a) Steel Boiler Tubes and Copper Ferrules;

(b) Laminated and Coil Springs.

Tender documents can be obtained at the Offices of the Consulting Engineers, MESSRS. SANDERSON, 40, Grosvenor Gardens, London, S.W.1.

Non-returnable fees will be charged for each set of documents: (a) 15s.; (b) 10s.

THE Proprietor of the Patent No. 191,494 for a Valve Cut-off Correction Instrument, is desirous of entering into arrangements by way of licence and otherwise on reasonable terms for the purpose of exploiting the same and ensuring its full development and practical working in this country. All communications should be addressed in the first instance to: HASELTINE, LAKE & CO., 28, Southampton Buildings, Chancery Lane, London, W.C.2.

London firm specialising in supply Rail-way Track Tools and Appliances desires handle additional lines. Established connection railways in England and Overseas. Close touch with Continent, Far and Near East and South America.—Write Box P.312, SCIFES, South Molton Street, London, W.1.

Universal Directory of Railway Officials and Railway Year Book

41st Annual Edition, 1935-36

Price 20/- net.

This unique publication gives the names of all the principal railway officers throughout the world, together with essential particulars of the systems with which they are connected. Much general and statistical information about railways is also concisely presented.

THE DIRECTORY PUBLISHING CO. LTD.
33, Tothill Street, London, S.W.1.

C.P.R. Transcontinental Jubilee

Fifty years ago, on June 28, 1886, the first passenger train for the Pacific coast set out from Montreal, and arrived at Port Moody, British Columbia, on July 4, 5½ days later. During the past week the golden jubilee of this event has been marked by a series of commemorative ceremonies and congratulatory messages. Sir Edward Beatty, G.B.E., Chairman and President, Canadian Pacific Railway Company, who is at present in London, sent the King (through the Rt. Hon. Lord Tweedsmuir, Governor General of Canada) the following loyal message on June 24:—

"The Chairman and President, directors, officers, and employees of the Canadian Pacific Railway Company, on this occasion of the fiftieth anniversary of the completion of this link of Empire and the operation of the first trans-Canada train, desire to convey through you to His Gracious Majesty King Edward the Eighth their respectful and loyal greetings. His Majesty's sustained interest in their great enterprise is a source of the keenest gratification to them all, and they will ever remember with pride the many occasions when it has been their inestimable privilege to serve His Majesty on his visits to Canada."

The King's Message

His Majesty replied to the Governor General in the following terms:—

"Please convey the following message from the King to President Canadian Pacific Railway: 'I sincerely thank all those associated with the Canadian Pacific Railway for their loyal assurances on the occasion of the fiftieth anniversary of this great railway which, ever since its inception, has played so notable a part in the development of the Dominion of Canada.' Edward R.I."

Sir Edward Beatty has also received the following among many other messages: —

From Sir Robert Horne, Chairman, G.W.R.

"I send you the warmest congratulations of my colleagues and myself

of the Great Western Railway Company on the fiftieth anniversary of the running of the first train on the Canadian Pacific Railway which linked the Atlantic and the Pacific Oceans. The achievements of the pioneers of your system created an epoch in the history of the British Empire and are acclaimed by all patriotic citizens of our great Imperial Commonwealth. It is a matter of gratification to all your friends that the high traditions of your railway are maintained today in all their glory and that you serve your people with such complete efficiency and success. We wish for you many proud anniversaries of this day and the highest destiny in the future."

From Sir Josiah Stamp, Chairman and President of the Executive, L.M.S.R.

"We on the London Midland and Scottish Railway who recently had the pleasure of sending the *Royal Scot* to complete the crossing from the Atlantic to the Pacific are specially interested in your fiftieth anniversary of the first transcontinental train and send you our heartiest congratulations on the magnificent progress made by your great company in the half century. You have been pioneers throughout and we cannot express to you any greater wish than that you continue to be leaders in the half century that is to come. I send this message not only for myself but also for my officers who hold you and your officers all in such esteem."

From Sir Herbert A. Walker, General Manager, Southern Railway

"Heartiest congratulations upon fiftieth anniversary of throughout service from the Atlantic to the Pacific Coast on the Canadian Pacific Railway. Hope sincerely the Canadian Pacific Railway will continue its great progress with unabated vigour."

From Sir Ralph Wedgwood, Chief General Manager, L.N.E.R.

"On this historic anniversary I have much pleasure in sending you on be-

half of officers and staff of London & North Eastern Railway of England our most cordial greetings and warmest congratulations coupled with assurance of our good wishes for future prosperity of your great company."

On Sunday evening last the "anniversary" transcontinental train left Windsor station, Montreal, with great ceremony. A place of honour on the platform was given to a huge three-tier birthday cake, 9 ft. high by 6 ft. in diameter, surmounted by a globe and a crown, and with the lowest tier surrounded with 50 candles. The band of the Victoria Rifles played on the station platform, as did their predecessors for the original train, and the City Council attended in a body. The Mayor of Montreal rang the departure bell and, to the strains of the National Anthem, the jubilee train left for Vancouver. The departure was broadcast to the Canadian nation and at least six of the 5,000 who saw the original train start were present. During this week the train is having a triumphant journey across the continent, and the festivities are scheduled to culminate today (Friday) with the arrival on the Pacific Coast.

SOVIET INVENTION.—The Kirov works at Leningrad has invented a device which registers in the cab the speed of the train, the gradient, and the position of the train on any given section. It is operated from one of the locomotive axles, and it is claimed that a higher standard of driving will be possible by its use.

Forthcoming Events

July 4-9.—Permanent Way Institution, at Plymouth. Annual Convention.

July 8 (Wed.).—Diesel Engine Users' Association, at Loughborough College, Loughborough. Summer Meeting.

The Chairman and Directors, G.W.R., in General Meeting Room, Paddington Station, London, W. 2, 3 p.m. To receive deputation on the Problem of Unemployment in Monmouthshire and South Wales.

July 15 (Wed.).—Institution of Electrical Engineers, Savoy Place, London, W.C.2. Conversazione and Reunion of Overseas Members.

July 17-20.—Railway Students' Association, at Highfield Hall, University of Southampton. Convention.

July 3, 1936

Railway Share Market

Bearing in mind the less active general market conditions in evidence this week and the disappointing traffic figures for the past week, home railway stocks are generally considered to have held up rather better than might have been expected. It was realised that the aggregate reduction of £62,000 in the past week's takings is due to the fact that comparison is with the period last year which included the end of June when various half-yearly adjustments are made. These adjustments are expected to be included in the current week's figures. A factor which tended to have a favourable influence was the belief that although the directors are likely to follow a conservative policy in view of the wages question, the forthcoming half-yearly dividends can be expected to compare satisfactorily with those of a year ago.

L.M.S. issues failed to hold an earlier moderate improvement, but the first preference were steadier on the confident belief that this stock and the redeemable preference will receive their full half-yearly payments. The 1923 preference was lower on balance at 69 $\frac{1}{4}$, although a satisfactory half-yearly payment is looked for and it is confidently expected that this stock will again receive its full dividend for the year. Indeed, there are continued anticipations current that the ordinary stock stands a reasonable chance of a small dividend for the year. The latter was fractionally lower at 22 $\frac{1}{2}$. Incidentally, this is a point higher than Southern deferred which has been somewhat out of favour. Southern preferred also went back to 90 $\frac{1}{2}$, despite the fact that its interim payment is expected in the market to be 2 per cent. Great

Western ordinary is lower on balance at 47 $\frac{1}{2}$ after touching 47, there being anticipations of a small interim payment. L.N.E.R. issues were rather better with the exception of the first preference which failed to respond to the view that the half-yearly payment on this stock will probably be 1 $\frac{1}{2}$ per cent, or 2 per cent. London Transport "C" was a bright feature on satisfaction with the past week's traffic receipts, and the price has moved up to 103 $\frac{3}{4}$.

Argentine Railway stocks were dull and chief interest attached to B.A. Gt. Southern issues. While the ordinary was better at 16, the five and six per cent, preferences lost fully a point to 59 and 39 respectively, but the 4 per cent. debentures improved fractionally to 75. San Paulo continued on offer, but Antofagasta were steadier later. Canadian Pacific preference were better. American railway stocks were without features of importance.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1935-36	Week Ending	Traffic for Week			No. of Weeks	Aggregate Traffics to Date			Shares or Stock	Prices					
			Total this year	Inc. or Dec. compared with 1935			This Year	Last Year	Increase or Decrease		Highest 1935	Lowest 1935	July 1, 1936	Yield % (See Note)		
South & Central America.																
Antofagasta (Chili) & Bolivia	834	28.6.36	15,640	+ 2,280	26	351,610	321,400	+ 30,210	Ord. Stk.	23	141 $\frac{1}{2}$	18 $\frac{1}{2}$	Nil			
Argentine North Eastern	753	27.6.36	8,458	+ 640	52	414,365	392,556	+ 21,809	A. Deb.	7	4	41 $\frac{1}{2}$	Nil			
Argentine Transandine									6 p.c. Deb.	49 $\frac{1}{2}$	30	47 $\frac{1}{2}$	87 $\frac{1}{2}$			
Bolivar	174	May, 1936	7,900	+ 800	22	34,800	33,400	+ 1,400	Bonds	13	5	10	Nil			
Brazil									14	11	16	3 $\frac{1}{2}$				
Buenos Ayres & Pacific	2,806	27.6.36	59,027	- 38,620	52	4,372,243	4,182,552	+ 189,871	Ord. Stk.	10 $\frac{1}{2}$	47 $\frac{1}{2}$	8	Nil			
Buenos Ayres Central	190	13.6.36	\$93,540	- \$25,760	50	\$5,342,200	\$5,531,700	- \$188,500	Mt. Deb.	21	10	16 $\frac{1}{2}$	Nil			
Buenos Ayres Gt. Southern	5,084	27.6.36	110,141	- 1,800	52	6,671,71	7,353,722	- 682,155	Ord. Stk.	27	13 $\frac{1}{2}$	16 $\frac{1}{2}$	Nil			
Buenos Ayres Western	1,930	27.6.36	41,676	+ 4,382	52	2,344,148	2,364,387	- 20,239	"	24	10	13	Nil			
Central Argentine	3,700	27.6.36	121,480	- 4,170	52	6,098,642	6,348,277	- 249,635	Dfd.	17 $\frac{1}{2}$	7	10	Nil			
Do.									Ord. Stk.	9	3 $\frac{1}{4}$	61 $\frac{1}{2}$	Nil			
Cent. Uruguay of M. Video	273	20.6.36	10,539	+ 742	51	567,839	680,947	- 111,108	Ord. Stk.	8 $\frac{1}{2}$	3	4	Nil			
Do. Eastern Ext.	311	20.6.36	2,288	+ 339	51	106,649	98,895	+ 7,754	"	"	"	"				
Do. Northern Ext.	185	20.6.36	1,587	+ 342	51	75,839	58,582	+ 17,257	"	"	"	"				
Do. Western Ext.	211	20.6.36	724	+ 130	51	44,260	38,091	+ 6,169	"	"	"	"				
Cordoba Central	1,218	27.6.36	35,290	+ 940	52	1,462,620	1,488,910	- 6,290	Ord. Inc.	4	1	11 $\frac{1}{2}$	Nil			
Costa Rica	188	Apr., 1936	15,044	+ 1,999	43	142,473	162,371	- 19,898	Stk.	35	30	35	51 $\frac{1}{2}$			
Dorada	70	May, 1936	13,600	+ 2,700	22	65,700	55,000	+ 10,700	1 Mt. Db.	103 $\frac{1}{2}$	102 $\frac{1}{2}$	102 $\frac{1}{2}$	57 $\frac{1}{2}$			
Entre Rios	810	27.6.36	11,682	+ 564	52	559,042	827,045	- 68,003	Ord. Stk.	15	6 $\frac{1}{2}$	82 $\frac{1}{2}$	Nil			
Great Western of Brazil	1,082	27.6.36	6,100	+ 1,500	26	205,600	211,900	- 6,390	Ord. Sh.	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	Nil			
International of Cl. Amer.	794	May, 1936	\$536,930	+ \$39,880	21	\$2,617,600	\$2,260,630	+ \$356,962	Pr. Li. Stk.	80 $\frac{1}{2}$	60	77	71 $\frac{1}{2}$			
Interoceanic of Mexico									1st Pref. Stk.	1 $\frac{1}{2}$	5 $\frac{1}{2}$	1 $\frac{1}{2}$	Nil			
La Guaira & Caracas	22 $\frac{1}{2}$	May, 1936	5,505	+ 1,075	22	22,880	19,830	+ 2,950	Stk.	8 $\frac{1}{2}$	8	51 $\frac{1}{2}$	Nil			
Leopoldina	1,918	27.6.36	17,639	+ 992	26	436,591	402,433	+ 34,158	Ord. Stk.	8 $\frac{1}{2}$	21 $\frac{1}{2}$	6	Nil			
Mexican	483	21.6.36	\$245,300	+ \$76,500	25	\$6,481,800	\$6,049,800	+ \$349,000	"	"	"	"				
Midland of Uruguay	319	May, 1936	6,380	+ 53	48	78,664	106,076	- 27,412	Ord. Sh.	11 $\frac{1}{2}$	14	3 $\frac{1}{2}$	Nil			
Nitrate	401	15.6.36	1,968	+ 6,211	24	63,702	67,104	- 3,402	Pr. Li. Stk.	64 $\frac{1}{2}$	42 $\frac{1}{2}$	21 $\frac{1}{2}$	Nil			
Paraguay Central	274	27.6.36	\$3,106,000	+ \$1,221,000	52	\$117,4,9,000	\$63,496,000	+ \$53,913,000	Pr. Li. Stk.	80 $\frac{1}{2}$	60	77	71 $\frac{1}{2}$			
Peruvian Corporation	1,059	May, 1936	79,746	+ 7,931	48	966,369	967,276	- 169,093	Pr. Li. Stk.	10 $\frac{1}{2}$	67 $\frac{1}{2}$	12 $\frac{1}{2}$	Nil			
Salvador	100	21.6.36	\$10,400	+ \$1,350	51	\$970,736	\$1,046,082	- 75,346	Pr. Li. Stk.	65	61	40	12 $\frac{1}{2}$			
San Paulo	153 $\frac{1}{2}$	21.6.36	29,670	+ 60	25	738,470	580,655	+ 157,815	Ord. Stk.	80	35	53 $\frac{1}{2}$	41 $\frac{1}{2}$			
Taltal	164	May, 1936	3,010	+ 330	48	38,505	34,065	+ 4,440	Ord. Sh.	11 $\frac{1}{2}$	11 $\frac{1}{2}$	1	10			
United of Havana	1,353	27.6.36	16,372	+ 2,304	52	1,224,522	1,2,2739	+ 21,783	Ord. Stk.	31 $\frac{1}{2}$	1	3	Nil			
Uruguay Northern	73	May, 1936	817	+ 195	48	9,110	11,484	- 2,374	Deb. Stk.	41 $\frac{1}{2}$	215 $\frac{1}{2}$	41 $\frac{1}{2}$	Nil			
Canada.																
Canadian National	23,617	21.6.36	686,540	+ 13,183	25	16,175,140	15,178,319	+ 996,821	Perp. Dbs.	78 $\frac{1}{2}$	52 $\frac{1}{2}$	67 $\frac{1}{2}$	51 $\frac{1}{2}$			
Canadian Northern									4 p.c. Gar.	103 $\frac{1}{2}$	93	101 $\frac{1}{2}$	31 $\frac{1}{2}$			
Grand Trunk									4 p.c. Deb.	14 $\frac{1}{2}$	8 $\frac{1}{2}$	12 $\frac{1}{2}$	Nil			
Canadian Pacific	17,237	21.6.36	498,600	+ 24,000	25	11,688,600	10,668,000	+ 1,020,600	Ord. Stk.	14 $\frac{1}{2}$	8 $\frac{1}{2}$	12 $\frac{1}{2}$	Nil			
India.																
Assam Bengal	1,329	10.6.36	35,340	+ 4,792	11	236,970	228,453	+ 8,517	Ord. Stk.	92 $\frac{1}{2}$	77 $\frac{1}{2}$	84 $\frac{1}{2}$	39 $\frac{1}{2}$			
Barsi Light	202	31.5.36	3,480	+ 622	9	22,027	24,407	- 1,980	Ord. Sh.	105	77 $\frac{1}{2}$	72 $\frac{1}{2}$	67 $\frac{1}{2}$			
Bengal & North Western	2,112	10.6.36	69,760	+ 4,484	11	570,465	563,376	+ 7,039	Ord. Stk.	301 $\frac{1}{2}$	291	306 $\frac{1}{2}$	51 $\frac{1}{2}$			
Bengal Dooms & Extension	161	31.5.36	3,482	+ 458	9	18,648	19,220	- 572	"	127 $\frac{1}{2}$	122	125 $\frac{1}{2}$	58 $\frac{1}{2}$			
Bengal-Nagpur	3,268	10.6.36	168,750	+ 10,159	11	1,263,375	1,347,871	- 78,496	"	105	100 $\frac{1}{2}$	102 $\frac{1}{2}$	37 $\frac{1}{2}$			
Bombay, Baroda & Cl. India	3,072	20.6.36	241,125	+ 9,600	12	2,219,400	1,968,300	+ 161,100	"	115 $\frac{1}{2}$	110	111 $\frac{1}{2}$	57 $\frac{1}{2}$			
Madras & Southern Mahratta	3,229	10.6.36	156,750	+ 451	11	1,180,500	1,159,974	+ 20,526	"	128 $\frac{1}{2}$	113 $\frac{1}{2}$	112 $\frac{1}{2}$	8			
Rohilkund & Kumaon	572	10.6.36	14,523	- 66	11	126,707	113,802	+ 12,905	"	294	262	305 $\frac{1}{2}$	51 $\frac{1}{2}$			
South India	2,531	10.6.36	119,682	+ 3,497	11	804,393	822,240	- 17,847	"	119 $\frac{1}{2}$	104 $\frac{1}{2}$	103 $\frac{1}{2}$	55 $\frac{1}{2}$			
Various.																
Beira-Umtali	204	Apr., 1936	60,712	- 10,667	30	442,973	450,161	- 7,188	B. Deb.	48	36	42	85 $\frac{1}{2}$			
Bilbao River & Cantabrian	15	May, 1936	1,065	- 428	22	7,128	8,644	- 1,516	Pr. Sh.	2	18 $\frac{1}{2}$	13 $\frac{1}{2}$	51 $\frac{1}{2}$			
Egyptian Delta	622	10.6.36	5,618	+ 456	11	39,590	36,573	+ 3,017	Inc. Deb.	31 $\frac{1}{2}$	2	31 $\frac{1}{2}$	Nil			
Great Southern of Spain	104	20.6.36	925	- 615	22	27,300	46,728	- 19,428	Inc. Deb.	14 $\frac{1}{2}$	93 $\frac{1}{2}$	93 $\frac{1}{2}$	55 $\frac{1}{2}$			
Kenya & Uganda	1,625	May, 1936	238,820	+ 37,731	22	1,226,510	1,123,621	+ 96,889	"	"	"	"				
Manila																
Mashonaland	913	Apr., 1936	100,263	- 31,988	30	7,972,219	820,037	- 110,818	1 Mg. Db.	104 $\frac{1}{2}$	100	103	47 $\frac{1}{2}$			
Midland of W. Australia	277	Apr., 1936	2,597	+ 36	43	137,461	134,787	+ 2,674	Inc. Deb.	98 $\frac{1}{2}$	93	93 $\frac{1}{2}$	55 $\frac{1}{2}$			
Nigerian	1,905	9.5.36	33,745	+ 1,735	6	191,046	173,989	+ 17,057	"	"	"	"				
Rhodesia	1,538	Apr., 1936	179,844	- 25,674	30	1,297,030	1,343,770	- 46,740	4 p.c. Db.	105 $\frac{1}{2}$	101	105	31 $\frac{1}{2}$			
South African	13,264	6.6.36	556,367	+ 14,120	10	5,498,918	5,160,215	+ 338,703	"	"	"	"				
Victoria	4,728	Dec., 1935	866,995	- 3,320	26	4,826,292	4,751,974	+ 74,318	"	"	"	"				
Zafra & Huelva	112	Apr., 1936	9,003	- 2,584	17	39,754	44,550	- 4,796	"	"	"	"				

NOTE.—Yields are based on the approximate current prices and are within a fraction of 1 $\frac{1}{16}$.

† Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend. Salvador and Paraguay Central receipts are in currency.

The variation in Sterling value of the Argentine peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being overestimated. The statements from July 1 onwards are based on the current rates of exchange and not on the par value.